

# SATYA POWER AND ISPAT LTD.

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.Dated: 05.07.2024

To,

The Director,
Ministry of Environment, Forest & Climate Change
Integrated Regional Office,
Aranya Bhawan, North Block, Sec-19,
Naya Raipur, Atal Nagar,
Chhatisgarh-492002

Sub: Submission of Half Yearly Compliance Report (October' 2023 to March' 2024) for "Expansion of Sponge Iron Plant from 2,40,000 TPA to 3,00,000 TPA and installation of Steel Plant (2,16,000 TPA of Induction Furnace, 90,000 TPA of Rolling mill and 30,000 TPA of Ferro Alloys) along with coal washery of 14,40,000 TPA capacity and Captive Power Plant (44 MW: 22 MW of WHRB and 24 MW of AFBC) located at Village Gatori, Block Bilha, District Bilaspur, Chhattisgarh by M/s. Satya Power and Ispat Limited."

Ref: MoEF&CC File No. J-11011/780/2008-IA. II (I) dated 30th December, 2010

Respected Sir,

With reference to the above-mentioned subject and cited reference matter, we are herewith submitting you the half yearly compliance report (October'2023 to March'2024) of the conditions stipulated in the Environment Clearance Letter issued by MoEF&CC for Expansion of Sponge Iron Plant from 2,40,000 TPA to 3,00,000 TPA and installation of Steel Plant (2,16,000 TPA of Induction Furnace, 90,000 TPA of Rolling mill and 30,000 TPA of Ferro Alloys) along with coal washery of 14,40,000 TPA capacity and Captive Power Plant (44 MW: 22 MW of WHRB and 24 MW of AFBC) located at Village Gatori, Block Bilha, District Bilaspur, Chhattisgarh by M/s. Satya Power and Ispat Limited.

We hope that you will find our reply in order.

Thanking you and with regards,

Satya Power And Ispat Ltd.

Director

Yours faithfully,

For, M/s Satya P/

Authorized Sign

Limited

Encl: Half Yearly Compitance Report (October'2023 to March'2024) in Soft Copy

WORKS: Vill.- Gatauri, Ratanpur Road, Bilaspur (C.G.)
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# Copy to:

- 1. The Member Secretary, IA Division (Industry-I), Ministry of Environment, Forests and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, Jor Bagh, New Delhi.
- The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi-110032.
- 3. Regional Office, Chhattisgarh Environment Conservation Board, Vyapar Vihar, Near Pt. Dindayal Upadyay Garden, Dist. Bilaspur (C.G.)



# **COMPLIANCE OF EARLIER ENVIRONMENTAL CLEARANCE CONDITIONS**

### BRIEF DESCRIPTION OF PROJECT

M/s Satya Power and Ispat Limited (SPIL) was granted Consent to Establish for 2x100 TPD Sponge Iron Manufacturing Unit (DRI Kiln) with production capacity 60,000 TPA vide letter no. 5062/TS/CECB/2004 dated 14.12.2004. Consent to Operate for the same was attained by the project from CECB vide Letter no. 4357/TS/CECB/2005 Raipur, dated: 14/09/2005 and amended CTO vide letter no. 3130/TS/CECB/2008 dated 16.06.2008.

Further, the project was granted Environmental Clearance from MoEF&CC vide File No.- J-11011/780/2008-IA-II(I) dated 30<sup>th</sup> December, 2010 for Expansion of Sponge Iron Plant from 2,40,000 TPA to 3,00,000 TPA and installation of Steel Plant (2,16,000 TPA of Induction Furnace, 90,000 TPA of Rolling mill and 30,000 TPA of Ferro Alloys) along with coal washery of 14,40,000 TPA capacity and Captive Power Plant (44 MW: 22 MW of WHRB and 24 MW of AFBC). However, out of all components in earlier environmental clearance, the industry has only established Sponge Iron Manufacturing Plant (DRI Kiln) – 3x100 TPD (90,000 TPA) and Coal Washery (14,40,000 TPA). The unit has obtained Consent to Operate from CECB vide CTO No. 10329/TS/CECB/2021 dated 24.02.2021 & further renewal vide Letter No. 8855/TS/CECB/2022 dated 04.03.2022 (valid upto 28.02.2025).

We are hereby submitting half-yearly compliance of granted Environmental Clearance for the period of October 2023 to March 2024.

Sr. No	Conditions	Compliance Status
SPEC	CIFIC CONDITIONS	
i	Compliance to all the specific and general conditions stipulated for the existing plant by the Central/State Government shall be ensured and regular reports submitted to the Ministry and its Regional Office at Bhopal.	The industry is complying with all the specific and general conditions stipulated for the existing plant and regular reports are being submitted to Ministry & its regional office at Raipur, Chhattisgarh.  Acknowledgment Proof of submission of half yearly compliance for period of April, 2023 to September, 2023 has been attached as Annexure-1.
ii	Efforts shall be made to reduce RSPM levels in the ambient air and a time bound action plan shall be submitted.	The industry has implemented extensive efforts to reduce RSPM levels. Several mitigation measures to control process as well as fugitive emissions are being followed by the industry. Few of them have been provided below:  DRI Kilns have been provided with Electrostatic Precipitator (ESP) to control emissions.  Approx. 33% of total plant area has been maintained as green area.  Green belt is being maintained at all boundaries of the plant to control dispersion of dust & RSPM out of the plant.

Satya Power And Ispat Ltd.

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	On- Line ambient air quality monitoring and continuous stack monitoring facilities for all the stacks shall be provided and sufficient air pollution control devices viz. Electrostatic precipitator (ESP), gas cleaning plant, venturi scrubber, bag filters etc. shall be provided to keep the emission levels below 50 mg/Nm³ by installing energy efficient technology.	<ul> <li>All discharge points and feed points, wherever the possibility of dust generation, water sprinkling is being done regularly.</li> <li>Transportation of raw material and products are is being done with covered vehicles.</li> <li>The industry has installed online Ambient Air Quality Monitoring System (AAQMS) and</li> </ul>
1 11	As proposed, Electrostatic	Station at Main gate etc. have been provided as Annexure-3.  DRI Kilns have been provided with Electrostatic Precipitator (ESP) to control emissions and emission levels are being maintained below 50 mg/ Nm³. The industry has recently upgraded its Electrostatic Precipitator (3 field to 4 field) that has further reduced it emissions. Description of the latest technological advancements that led to reduction in emission levels have been provided as Annexure-4.  At present, only DRI Plant (3x100 TPD) is running
	precipitator (ESP) shall be provided to sinter plant, WHRB, FBC, DRI plants; and dust catcher followed by venturi scrubber to control SPM levels within 50 mg/Nm³, Fume extraction system shall be provided to induction furnaces to control the	and existing coal washery is not operational.  For existing DRI Kiln, the industry has installed Electrostatic Precipitator (ESP) for emission control and is maintaining SPM levels below 50 mg/Nm³.  For coal washery, appropriate ESP with bag filters were attached for process emission control.

Sr. No	Conditions	Compliance Status
	emissions within the prescribed standards.	However, the coal washery has been non-operational since last two years & has been sold to another entity.
iv	The National Ambient Air Quality Standards issued by the Ministry vide G.S.R No. 826(E) dated 16 <sup>th</sup> November, 2009 shall be followed.	The industry is complying by the standards issued by NAAQS vide G.S.R No. 826 (E) dated 16 <sup>th</sup> November, 2009.
V	Gaseous emission levels including secondary fugitive emission from all the sources shall be controlled within the latest permissible limits issued by the CPCB shall be followed. New Standards for the sponge iron plant issued by the Ministry vide G.S.R. 414(E) dated 30 <sup>th</sup> may, 2008 should be followed.	As per new standards for the sponge iron plant issued by the Ministry vide G.S.R. 414(E) dated 30 <sup>th</sup> May, 2008, the industry has already installed ESP in DRI Kiln to control emission limits below 50 mg/Nm³. The unit is maintaining following fugitive control measures to control dust/emission within permissible limits:  • Approx. 33% of total plant area has been maintained as green area.  • Green belt is being maintained at all boundaries of the plant to control dispersion of dust out of the plant.  • Regular water sprinkling is being carried out in the plant at suitable intervals to control dust generation.  • The raw material handling section is being provided with dust suppression by water sprinkling at open stockyard.  • Transportation of raw material and products are is being done with covered vehicles.  • Pucca/concrete roads have already been developed to prevent dust emissions during transportation.  • Conveyor belt of raw material is being covered.
vi	Hot gases from DRI kiln shall be passed through Dust Settling Chamber (DSC) to remove coarse solids and After Burning Chamber (ABC) to burn CO completely and used in waste heat recovery boiler (WHRB). The gas then shall be cleaned in ESP before leaving out into the atmosphere through ID fan and	For existing DRI Kiln, the industry has installed Electrostatic Precipitator (ESP) with ID fans for emission control and is maintaining SPM levels below 50 mg/Nm³. Continuous Stack Emission Monitoring System has already been installed.  The industry did not install WHRB boiler in the current operational plant (3x100 TPD DRI Kiln). The company has proposed the same in further expansion
vii	stack.  Total water requirement shall not exceed 2361 m³/d. The permission from the competent authority shall be obtained for water drawl. Efforts shall	of project along with higher capacity of DRI.  In operational sponge iron plant (DRI Kiln- 3x100 TPD), the total freshwater requirement is 93 KLD.  The industry has obtained CGWA NOC for 93 KLPD groundwater withdrawal vide NOC No.

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No	Conditions	Compliance Status
	be made to use maximum water from rain water harvesting sources. Use of air-cooled condensers shall be explored and closed-circuit cooling	CGWA/NOC/IND/REN/2024/9355 (valid upto 22.01.2027). CGWA NOC has been attached as Annexure-5.
	system shall be provided to reduce water consumption and water requirement shall be modified	Since the industry has not installed CPP, air-cooled condensers have not been installed.
	accordingly. All the effluent should be treated and used for ash handling, dust suppression and greenbelt development. No effluent shall be discharged and 'zero' discharge shall be adopted. Sanitary sewage should be treated in septic tank followed by	The industry is a "Zero-liquid Discharge" Unit. Wastewater generated from DRI Kiln is being collected and treated via primary treatment system & reused within the plant for dust suppression. Any other effluent is not being generated from the existing running plant. Domestic sewage is being sent to septic tanks via soak pits.
	soak pit.	The industry is being/will be practicing maximum storage of rainwater and reuse stored rainwater within plant activities.
viii	Efforts shall be made to make use of rain water harvested. If needed, capacity of the reservoir should be enhanced to meet the maximum water requirement. Only balance water requirement shall be met from other sources.	The industry is being/will be practicing maximum storage of rainwater and reuse stored rainwater within plant activities.
	Regular monitoring of influent and effluent surface, sub-surface and ground-water (including chromite) should be ensured and treated waste water should meet the norms prescribed by the State Pollution Control Board or described under the E(P) Act whichever are more stringent. Leachate study for the effluent generated and analysis shall also be regularly carried out and report submitted to the Ministry's Regional Office at Bhopal, Chhattisgarh Environment Conservation Board (CECB) and CPCB.	Currently, there is only sponge iron manufacturing plant which is operational. Wastewater generated from DRI Kiln is being collected and treated via primary treatment system & reused within the plant for dust suppression. Any other effluent is not being generated from the existing running plant.
Х	The water consumption shall not exceed as per the standard prescribed for the steel plants.	The water consumption does not exceed as per the standard prescribed for the steel plants.



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No	Conditions	Compliance Status
xi	All the coal fines, char from DRI plant and washery rejects shall be utilized in FBC boiler of power plant and no char shall be used for briquette making or disposed off anywhere else. AFBC boiler shall be installed simultaneously along with the DRI plant to ensure full utilization of char from the beginning. Scrap shall be used in steel melting shop (SMS) and SMS slag and kiln accretions shall be properly disposed off in environment-friendly manner.	At present, only DRI Plant (3x100 TPD) is running and generates Dolochar. Dolochar from DRI Plants is being sent to nearby FBC power plants & other units for reuse as raw material. Latest tax invoices for sale of Dolochar to different industries has been attached as <b>Annexure-6</b> .
xii	Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 1999 and its subsequent amendments.	At present, only DRI Plant (3x100 TPD) is running and no CPP has been installed by the company. From DRI Kiln, Dolochar & dust from APCD is being/will be generated. Dolochar from DRI Plants is being sent to nearby FBC power plants & other units for reuse as raw material. Dust from APC devices is being used for low-lying land filling in nearby villages. At present, no fly ash is being generated.
xiii	Vehicular pollution due to transportation of raw material and finished products shall be controlled. Proper arrangement shall also be made to control dust emission during loading and unloading of the raw material and finished product.	<ul> <li>The industry is implementing appropriate measures for dust control management. Few of the same have been provided below:</li> <li>Properly covered vehicles for transportation of raw materials and products are being used.</li> <li>Speed limits are strictly followed.</li> <li>All roads have been cleaned by utilizing machinery and manpower.</li> <li>Approx. 33% of total plant area has been maintained as green area.</li> <li>Regular water sprinkling is being carried out in the plant at suitable intervals to control dust generation.</li> <li>The raw material handling section is being provided with dust suppression (DS) by water sprinkling at open stockyard.</li> </ul>
xiv	Transportation of raw coal during the initial phase shall be 40-T mechanically covered or tarpaulin covered trucks from the coalmines to the washery. The raw coal, washed coal and coal wastes(rejects) shall be stacked properly at earmarked site(s) within sheds/stockyards fitted with	Transportation of raw coal is done via covered trucks from coal mines to the washery & appropriate stacks have been installed within the coal washery to control air emissions.  However, the coal washery has been non-operational since last two years & has been sold to another entity.

Sr. No	Conditions	Compliance Status
	wind breakers/shields. Adequate measures shall be taken to ensure that the sorted minerals do not catch fire.	
xv	Hoppers of the coal crushing unit at the crushing shed and washery unit shall be fitted with high efficiency bag filters/Dust extractors and mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of belt conveyor systems which shall be closed and from transportation roads.	Appropriate bag filters & dust extractors with mist spray water sprinkling systems have been installed within the premises of coal washery to control emissions from process. Covered conveyor systems have been installed & all transfer points are covered within the washery to control fugitive emissions. The industry has made pucca black-topped roads within the premises to prevent dust emissions. However, the coal washery has been non-operational since last two years & has been sold to another entity.
xvi	All internal roads shall be black topped. The roads shall be regularly cleaned with mechanical sweepers. A 3- tier avenue plantation using native species shall be developed along the roads. Facilities for parking of trucks carrying raw coal from the linked coalmines shall be created within the Unit.	The industry has made pucca black-topped roads within the premises to prevent dust emissions. The roads are being regularly cleaned. The unit has maintained 33% of plant area as green area and a 3-tier green belt is being maintained at the boundary. Presently, there are approx. 18,500 no. of trees within the plant with native species like Badam, Peepal, Bargad, False Ashoka, Papaya, Kaner, Teak/Sangwan, Palm, Banana, Alstonia (Saptaparni/Satvan), Palash, Patravali, Banana, Neem, Cassia, Amaltas, Jamun, Jungle Jalebi, Keekar, Flame Tree, Kadamb, Gulmohar, Peltophorum (Yellow Flame), Kala Sirish, Sirish, Acacia, Nilgiri, Mahua, Semhar, Guava, Karanj, Eucalyptus. Latest photographs of green area have been attached as Annexure-11.
xvii	The washery unit shall be a zero-discharge facility and no waste water shall be discharged from the washery into the drains/natural water courses. Recycled water shall be used for development and management of green belt and in dust suppression from plant operations.	The washery unit is a zero-discharge facility as closed-circuit cooling system has been adopted in the plant. No wastewater is being discharge from the project. However, the coal washery has been non-operational since last two years & has been sold to another entity.
xviii	Proper handling, storage, utilization and disposal of all the solid waste shall be ensured and regular report regarding toxic metal content in the waste material and its composition, end use of solid/hazardous waste should be submitted to the Ministry's	At present, only DRI Plant (3x100 TPD) is running and existing coal washery is not operational. From DRI Kiln, Dolochar & dust from APCD is being/will be generated. Dolochar from DRI Plants is being sent to nearby FBC power plants & other units for reuse as raw material. Dust from APC devices is being used for low-lying land filling in nearby villages. Kiln

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No	Conditions	Compliance Status
	Regional Office at Bhopal, CECB and CPCB.	Accretion Slag & Wet Scrapper Slag is being sent to Road Contractor for road construction.
		Latest tax invoices for sale of Dolochar to different industries has been attached as <b>Annexure-6</b> . Permission from Gram Panchayat of nearby villages has for the same has been attached as <b>Annexure-7</b> . MOU with nearby road contractors for Accretion Slag & Wet Scrapper Slag has been attached as <b>Annexure-8</b> .
		The unit has been granted authorization under Hazardous and Other Wastes (Management & Transboundary Movement) Rules for disposal of hazardous wastes being generation from the project. The authorization has been granted by CECB vide Letter No. 9526/HSMD/HO/CECB/2021 dated 3.2.2021 (valid till 1.2.2026). (Attached as Annexure-9).
	Đ	Used/Spent Oil is being used for lubrication in machinery/sold to authorized recyclers. Empty barrels//containers/liners/ contaminated with hazardous chemicals/wastes are being sold to authorized recyclers. Contaminated cotton rags or other cleaning materials from plant are being incinerated in kiln of plant /sent to cement kiln for co-processing.
		Latest reports of TCLP testing have been attached as
xix	A time bound action plan shall be submitted to reduce solid waste, its proper utilization and disposal.	Annexure-10.  At present, only DRI Plant (3x100 TPD) is running and existing coal washery is not operational.  From DRI Kiln, Dolochar & dust from APCD is being/will be generated. Dolochar from DRI Plants is being sent to FBC power plants & other units for reuse as raw material. Dust from APC devices is being used for low-lying land filling in nearby villages. Kiln Accretion slag & Wet Scrapper Slag is being sent to Road Contractor for road construction. Moreover, the industry has further proposed to use high GCV coal RB-2 that will increase the Kiln Campaign from 1 month to 3 months resulting in less accretion slag generation. High GCV coal will also reduce generation of fly ash & dolochar. In future, the company will propose AFBC boiler for utilization of dolochar within the plant premises as fuel.

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No	Conditions	Compliance Status
XX	Risk and Disaster Management Plan along with the Mitigation measure shall be prepared and a copy submitted to the Ministry's Regional Office at Bhopal, CECB and CPCB within 3 months of issue of environment clearance letter.	Mitigation measures has been prepared and being well implemented in the plant. The disaster management plan has also been duly approved by Health & Safety Department, CG State Government.
xxi	As proposed, green belt shall be developed in 33% of plant area as per the CPCB guidelines in consultation with the DFO.	The industry has developed approx. 8.81 hectares of green area (~33% of total plant area). Presently, there are approx. 18,500 no. of trees within the plant with native species like Badam, Peepal, Bargad, False Ashoka, Papaya, Kaner, Teak/Sangwan, Palm, Banana, Alstonia (Saptaparni/Satvan), Palash, Patravali, Banana, Neem, Cassia, Amaltas, Jamun, Jungle Jalebi, Keekar, Flame Tree, Kadamb, Gulmohar, Peltophorum (Yellow Flame), Kala Sirish, Sirish, Acacia, Nilgiri, Mahua, Semhar, Guava, Karanj, Eucalyptus etc. Latest photographs of green area have been attached as Annexure-11.
xxii	All the recommendations made in the charter on Corporate Responsibility for Environment Protection (CREP) for the Steel Plants should be implemented	CREP Compliance has been attached as Annexure- 13.
xxiii	All the commitments made to the public during the Public Hearing/ Public Consultation meeting held on 13 <sup>th</sup> March, 2010 should be satisfactorily implemented and a separate budget for implementing the same should be allocated and information submitted to the Ministry's Regional Office at Bhopal.	All the commitments made to public during PH held on 13 <sup>th</sup> March,2010 are being followed. The industry has contributed for several social aspects in the nearby areas in form of Corporate Environment Responsibility (CER). The company has spent Rs. 2.56 lakh in nearby villages from October, 2023 to March, 2024. Details of activity-wise CER contribution have been attached as <b>Annexure-14</b> .
xxiv	At least 5% of the total cost of the project should be earmarked towards the corporate social responsibility and item-wise details along with time bound action plan should be prepared and submitted to the Ministry's Regional Office at Bhopal. Implementation of such program should be ensured accordingly in a time bound manner.	As per granted EC dated 30.12.2010, only 1x100 TPD DRI Kiln with existing 2x100 TPD & 200 TPH Coal Washery has been installed.  However, the industry is regularly contributing towards socio-economic development of surrounding areas. The company has spent Rs. 2.56 lakh in nearby villages from October, 2023 to March, 2024. Details of contribution spent on the same have been attached as <b>Annexure-14</b> .

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No	Conditions	Compliance Status
XXV	Rehabilitation and Resettlement Plan for the project affected population including tribals, if any shall be implemented as per the policy of the State Govt. in consultation with the State Govt. of Chhattisgarh. Compensation paid in any case should not be less than the norms prescribed under the National Resettlement and	Noted.
xxvi	Rehabilitation Policy, 2007.  The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	During construction phase, the company had employed mostly local labours from nearby villages. Temporary housing structures were made for resting within the plant site; However, this has been dismantled before operation.
GEN	ERAL CONDITIONS	
i	The project authority shall adhere to the stipulations made by Chhattisgarh Environment Conservation Board (CECB) and State Government.	The project is adhering to the stipulations made by Chhattisgarh Environment Conservation Board (CECB) and State Government.
ii	No further expansion or modification of the plant shall be carried out without prior approval of this Ministry.	The industry assures that no expansion or modification will be done without prior approval from Ministry.
iii	The gaseous emissions from various process units shall conform to the load/mass-based standards notified by this Ministry on 19 <sup>th</sup> May, 1993 and standards prescribed from time to time. The CECB may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time, the emission level shall go beyond the prescribed standards. Interlocking facilities shall be provided so that process can be automatically stopped in case emission level exceeds the limit.	At present, only DRI Plant (3x100 TPD) is running and existing coal washery is not operational. For existing DRI Kiln, the industry has installed Electrostatic Precipitator (ESP) for emission control and is maintaining SPM levels below 50 mg/Nm³. Continuous Stack Emission Monitoring System has already been installed. Interlocking facilities have been provided so that process can be automatically stopped in case emission level exceeds the limit.

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ÎV	The overall noise levels in and around the plant area shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environmental (Protection) Act, 1986 Rule, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	The company conducts overall noise levels in and around the plant area by NABL approved laboratory and the noise levels are being kept within the standards. (Noise Monitoring reports of the project site by third party NABL Accredited Laboratory validating the same has been attached as <b>Annexure-15</b> .
V	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Occupational health surveillance of the workers is being done on a regular basis and records are being maintained as per the Factories Act. Sample of latest health record has been attached as <b>Annexure-16</b> .
vi	All the environment management measures given in the EIA/EMP shall be implemented and complied with.	The industry is maintaining all the environment management measures in EIA/EMP. Environment protection measures like ESP, Bag Filters, Water Sprinkling System, Pucca Internal Roads, Covered Conveyors, 33% green area etc. have been implemented in the plant premises. Approx. Rs. 14.66 Crores has been spent on environment protection measures in existing plant.
vii	Proper housekeeping and adequate occupational health programmes shall be taken up as per the Factory Act.	<ul> <li>The industry has adopted appropriate housekeeping &amp; adequate occupational health programmes within the premises.</li> <li>Regular sweeping of road and buildings is being done.</li> <li>Regular water sprinkling in dust prone area is in practice.</li> <li>Good greenbelt is provided all around the plant.</li> <li>Occupational health surveillance of the workers is being done on a regular basis and records are being maintained as per the Factories Act.</li> </ul>
ziii		The industry has taken up eco-development including community welfare measures in the area such as deepening of ponds in Kacchar & Gatauri Village, borewells in Gatauri Village, Renovation of School in Gatauri Village. Details of contribution done on the same along with photographs & appreciation letters from local village panchayat have been provided as Annexure- 14.



Sr.	Conditions	Compliance Status
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ix	A separate environmental management cell to carry out various management and monitoring functions shall be set up under the control of Senior Executive.	There is a separate Environment Management Cell within the industry to carry out various management and monitoring functions. Hierarchy chart of Environment Management Cell has been attached as Annexure-17.
x	The requisite funds shall be earmarked towards total capital cost and recurring cost/ annum for environmental pollution control measures and used judiciously to implement the conditions stipulated by the Ministry of Environment and Forest as well as the State Government. The funds so provided shall not be diverted for any other purpose.	The industry has allocated requisite funds for Environment Management & Pollution Control. Rs. 14.66 Crores (Capital Cost) and Rs. 18 Lakhs (Recurring Cost) have been spent on environmental pollution control measures till date.
xi	The Project Authorities shall inform the Regional Office as well as the Ministry, the date of final approval of the project by the concerned authorities and the date of commencing the land development work.	The industry was not aware that they need to inform the Ministry about commencement of land development work. The industry sincerely apologizes for the same and assure the same will not be repeated in future.
xii	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zill Parishad/ Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied with.  The copy of Environmental Clearance was circulated to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban Local Body within 30 days from the date if issue of EC.
xiii	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF, the respective Zone Office of CPCB and the SPCB. The criteria pollutant levels namely; RSPM, SO <sub>2</sub> , NO <sub>x</sub> (ambient levels as well as stake	The industry is complying with all the specific and general conditions stipulated for the existing plant and regular reports are being submitted to Ministry & its regional office at Bhopal. Acknowledgment Proof of submission of half yearly compliance for period of April 2023 to September 2023 has been attached as <b>Annexure-1</b> . The same is being uploaded on company website. Screenshot of the same has been attached as <b>Annexure-18</b> .  The criteria pollutant levels namely; RSPM, SO <sub>2</sub> , NO <sub>x</sub> indicated for the projects are being monitored

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No	Conditions	Compliance Status
	emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	within the premises and the same are being displayed
ΧÍV	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copy as well as e-mail) to the respective Regional Office of MOEF, the respective zonal Office of CPCB and the CWCB. The Regional Office of this Ministry at Bhopal/CPCB/CECB shall monitor the stipulated conditions.	The project proponent regularly submits six monthly reports on the status of the compliance of the stipulated environmental conditions to regional office of MoEF&CC at Raipur, Chhattisgarh. Acknowledgment Proof of submission of half yearly compliance for period of April 2023 to September 2023 has been attached as Annexure-1.
xv	The environmental statement for each financial year ending 31 <sup>st</sup> March in From-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MOEF by e-mail.	Copy of latest Environment Statement (Form-V) has been attached as Annexure-19.
	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance letter are available with the CECB and may also be seen at the Website of the Ministry of Environment and Forests at http://envfor.nic.in. This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of	The industry had published the advertisement as per the stipulations in Environmental Clearance in two newspapers i.e., Midday & Deshbandhu dated 14.02.2011. However, the copies are not available. But as of now copies are not available. The company sincerely apologizes for the same and assure the same will not be repeated in future.



Sr. No	Conditions	Compliance Status
	which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office at Bhopal.	
12.0	The Ministry may revoke or suspend the clearance, if implementation of any of the above condition is not satisfactory.	The company assures that the industry will abide by all the stipulation of Environmental Clearance.
13.0	The Ministry reserved the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Noted.
14.0	The above condition shall be enforced, inter-alia under the provision of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, The Environment (Protection) Act, 1986, Hazardous Wastes (Management Handling & Trans-boundary) Rules, 2008 and the Public (Insurance) Liability Act,1991 along with their amendments and rules.	Noted and being complied with,

Satya Power And Ispat Ltd.



# SATYA POWER AND ISPAT LTD.

1 st floor, V.R. Plaza, Link Road, Bilaspur (C.G.) Phone: 07752 - 231737, Fax: 07752 - 404453

**GSTIN: 22AAHCS4472N1Z0** 

Dated: ..30.12.2023

To,

The Director, Ministry of Environment, Forest & Climate Change Integrated Regional Office, Aranya Bhawan, North Block, Sec-19, Naya Raipur, Atal Nagar, Chhatisgarh-492002

Sub: Submission of Half Yearly Compliance Report (April' 2023 to September' 2023) for "Expansion of Sponge Iron Plant from 2,40,000 TPA to 3,00,000 TPA and installation of Steel Plant (2,16,000 TPA of Induction Furnace, 90,000 TPA of Rolling mill and 30,000 TPA of Ferro Alloys) along with coal washery of 14,40,000 TPA capacity and Captive Power Plant (44 MW: 22 MW of WHRB and 24 MW of AFBC) located at Village Gatori, Block Bilha, District Bilaspur, Chhattisgarh by M/s Satya Power and Ispat Limited

Ref: MoEF&CC File No. J-11011/780/2008-IA. II (I) dated 30th December, 2010

Respected Sir.

With reference to the above-mentioned subject and cited reference matter, we are herewith submitting you the half yearly compliance report (April'2023 to September'2023) of the conditions stipulated in the Environment Clearance Letter issued by MoEF&CC for Expansion of Sponge Iron Plant from 2,40,000 TPA to 3,00,000 TPA and installation of Steel Plant (2,16,000 TPA of Induction Furnace, 90,000 TPA of Rolling mill and 30,000 TPA of Ferro Alloys) along with coal washery of 14,40,000 TPA capacity and Captive Power Plant (44 MW: 22 MW of WHRB and 24 MW of AFBC) located at Village Gatori, Block Bilha, District Bilaspur, Chhattisgarh by M/s Satya Power and Ispat Limited

We hope that you will find our reply in order.

Thanking you and with regards,

Yours faithfully,

nd Ispat Limited

WORKS: Vill.- Gatauri, Ratanpur Road, Bilaspur (C.G.)

-mail : spipl@hotmail.com • Website : www.satyapower.com Power And Ispat Ltd.

CIN No. U40101CT2003PLC015521

# Encl: Half Yearly Compliance Report (April'2023 to September'2023) in Soft Copy

# Copy to:

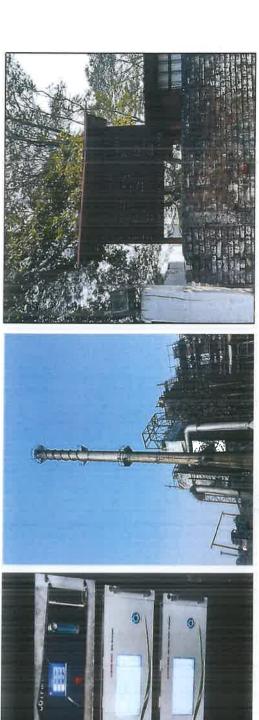
- The Member Secretary, IA Division (Industry-I), Ministry of Environment, Forests and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, Jor Bagh, New Delhi.
- 2. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi-110032.
- 3. Regional Office, Chhattisgarh Environment Conservation Board, Vyapar Vihar, Near Pt. Dindayal Upadyay Garden, Dist: Bilaspur (C.G.)

Satya Power And Ispat Ltd.

- CO.O.

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CPCB: 12/06/2024 11:15:57 Apply SPCB: -----① 11:18:34 AM Select Industry **①** 12:00:00 AM Parameters Chart 1 PM S02 12-06-2024 Select Category Ы 12-06-2024 > • chhattisgarh | Iron And Steel ( Not in ganga basin ) 35.58 mg/Nm3 Last recvd: 2024-06-12 Chhatisgarh Pollution Central Board Stack\_1\_Furnace Std Val : 0 - 1000 **SO2** 11:18:05 Satya Power and Ispat Limited > 15 min Camera > 37.89 mg/Nm3 Last recvd : 2024-06-12 Graph Map Stack\_1\_Furnace Std Val : 0 - 150 ALL 11:18:05 PM Salya Power And Isper chhattisgarh 0.00 M70018 Surveyard Parameter deceeded alerts Parameter exceeded alerts Offline alerts Delay alerts Dashboard













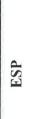


GREEN AREA



RAW MATERIAL SHED









# LATEST EFFORTS/ACTIONS MADE TO REDUCE RSPM LEVELS

The industry has upgraded its Electrostatic Precipitator from 3-field to 4-field. Increased fields allow for more efficient particle removal by providing additional opportunities for charging and collection of particles. Therefore, it has enhanced the overall performance and effectiveness of the electrostatic precipitator in removing pollutants from the gas stream. This has led to effective decrease in emissions from stacks.

Comparative Technical Statement of earlier ESP & its upgraded version has been provided below:

S.No.	Particulars	Earlier ESP	Upgraded ESP
1,	Type of ESP	3-Field	4-Field
2.	Number of Transformers	2 no.	4 no. (1 for each)
3.	No. of Gas Pass	10	12
4.	Efficiency	90-92%	97-99%

Satya Power And Ispat Ltd.

Director



भारत सरकार जल शक्ति मंत्रालय जल संसाधन, नदी विकास और गंगा संरक्षण विभाग केन्द्रीय भूमि जल प्राधिकरण Government of India Ministry of Jal Shakti Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority

# (भूजल निकासी हेतु अनापत्ति प्रमाण पत्र) NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Р	roject Nam	e:		Saty	a Powe	r And	d Ispat L	imited							
Project Address:			Villa	Village Gautarui, Ratanpur Road, I			Bilas	Bilaspur							
Village:			Gata	ıuri				Bloc	ck:	Ве	lha	1			
D	istrict:			Bilas	pur				Stat	e:	Ch	hattisga	h .		
Р	in Code:										1				
С	ommunicat	tion Addr	ess:	1st F	loor Vr	Plaza	a, Link F	Road Bila	aspur	, Belha	a, Bi	ilaspur, (	hhattis	garh - 4	95001
Address of CGWB Regional Office :					Logistic							attisgarh, artarai, R			
1.	NOC No.	:	CGWA/NC	C/IND/F	REN/1/2	024/9	9355	2.	Dat	te of Is	ssue	ence C	4/04/20	24	
3.	Applicatio	n No	21-4/471/0	T/IND/2	017			4.					Semi Critical		
5.	Project St	atus:	Existing G	ound W	ater			6.	NO	С Тур	e:	F	Renewal		
7.	Valid from	n:	23/01/2024				S. V	8.	Val	id up	to:	2	22/01/2027		
9.	Ground W	/ater Abs	straction Perr	nitted:											
	Fresh	Water		Salin	Saline Water De			ewate	watering			Total			
	m³/day	m³/y	ear m	³/day	m	³/yeaı		m³/day		m³/y	/ear	n	³/day m³/ye		³/year
	93.00	3069			20										
10.	Details of	ground v	vater abstrac			g stru	ctures		_						
			Total Exi					1				otal Pro			
		<b>.</b> .	DW	DCB	BW	TW		MPu	DI	-	CB	BW	TW	MP	MPu
- DV	Abstraction			0	2	0	0	0	0		0	0	0	0	0
			um-Bore Well; B					ne Pit;MP	u-iviirie	Pumps	5	206	646.00		
-					ation Charges paid (Rs.): plicable) paid (Rs.):										
		-		• •		` ′									
13.	Number of Piezometers(Observationstructed/ monitored & Monitorionstructed/						No. of Piezome				Monitoring Mechanism  Manual DWLR** DWLR With T		F-1		
	**D\\\  D   Di	gital \Mator	Level Recorder								uai	DWLR*	DVVLI		elemetr
	DVVLIX - DI	gitai vvatei	Level Necolue					1		0		1		0	

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011 Phone: (011) 23383561 Fax: 23382051, 23386743 Website: cgwa-noc.gov.in

> पानी बचाये – जीवन बचाये SAVE WATER - SAVE LIFE

Satya Power And Ispat Ltd.

Director

Charles of the state of the sta

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011 Phone: (011) 23383561 Fax: 23382051, 23386743 Website: cgwa-noc.gov.in

> पानी बचाये – जीवन बचाये SAVE WATER - SAVE LIFE

atiya Power And Ispat Ltd.

Validity of this NOC shall be subject to compliance of the following conditions:

#### Mandatory conditions:

- 1) Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate
- 2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year
- 3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines
- 4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through
- 5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine
- 6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Goyt, approved/ NABL accredited lab.
- 7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.
- 8) Industries abstracting ground water in excess of 100 m 3 /d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.
- Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act. 1986
- 10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

- 11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).
- 12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).
- 13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.
- 14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon
- 15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm,
- 16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.
- 17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any
- 18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.
- 19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines
- 20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.
- 21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.
- 22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking
- 23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.
- 24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures
- 25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCE list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.
- 26) In case of new infrastructure projects having ground water abstraction of more than 20 m3/day, the firm/entity shall ensure implementation of dual water supply system in the projects.
- 27) In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.
- 28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.
- 29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be, 30) This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).
  31) In the self-compliance report, the PP shall submit details of Drilling Agency/ Agencies, which has/ have constructed BW(s)/ TW(s) along with undertaking to the effect that all necessary measures have been taken as per directions of Hon'ble Supreme Court provided in Annexure-VII of guidelines dated 24.09.2020 in respect of abandoned/ failed BW(s)/ TW(s)/Piezometer(s), if any, The PP is advised to engage registered drilling agency/ agencies. In the event of any mishap/ unfortunate incident due to negligence in taking measures for prevention of accident due to falling in Bore Well, both PP and concerned drilling agency shall jointly be held responsible and penal action as per extant Government rules shall be taken.

(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)

# CENTRAL GROUND WATER AUTHORITY

Department of Water Resources, River Development and Ganga Rejuvenation Ministry of Jal Shakti, Govt. of India

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011

Phone: (011) 23383561 Fax: 23382051, 23386743 Website: cgwa-noc.gov.in

> पानी बचाये – जीवन बचाये SAVE WATER - SAVE LIFE

Satya Power And Aspat Ltd.

# Receipt

(As per the guideline Gazette Notification S.O. 3281(E) regarding the New Guidelines dated 24,09,2020 of CGWA, MoJS, Govt. of India)

		https://cgwa-noc.gov.ii/	
Application No,:	21-4/471/CT/IND/2017		Date of Issuence:04/04/2024
Name of Firm:	SATYA POWER AND	ISPAT LIMITED	
AppType Category:	Steel Industry		
Application Type:	Industrial		
PAN/GSTIN No. of Fir	m/Individual:	/	

S Description	Amount (Rs.)
1. Application Processing Fee	5000.00
2. Ground Water Abstraction /Restoration charges	206646.00
3. Environmental Compensation Charges (ECRGW) (Date From	to ) Days-
4. Penalty for non-Compliance of NOC conditions Condition to be mentioned	0.00
Rs. Rupees Two Lakh Eleven Thousand Six Hundred Forty Six O	nly 211646.00

This is an system generated invoice, hence, does not require ink signed.

Sava Power And Ispat Ltd.

Director

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Ack No.

182313462473604

Ack Date

₹ 24-Арг-23

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	SPIL

SATYA	POWER	AND	ISPAT	LTD	(23-24)

		,	

SAITA	POWER	AND	ISPAI	LID(Z	<b>3-24</b> )

nee (Ship to)		
nee (Snip to)		

Consign

Mahendra Sponge and Power Ltd.

Plot No 76-77, Phase-II,

Siltara Industial Area, Siltara, Raipur - 493111

GSTIN/UIN State Name

: 22AADCM5765E1ZN : Chhattisgarh, Code: 22

Buyer (Bill to)

Mahendra Sponge and Power Ltd.

Plot No 76-77, Phase-II.

Siltara Industial Area, Siltara, Raipur - 493111

GSTIN/UIN State Name

: 22AADCM5765E1ZN : Chhattisgarh, Code : 22

Invoice No.	Dated
SPIL/23-24/98	24-Apr-23
Delivery Note	Mode/Terms of Payment
Reference No. & Date.	Other References
MSPL/23-24/01 dt. 24-Apr-23	
Buyer's Order No.	Dated
MSPL/23-24/01	24-Apr-23
Dispatch Doc No.	Delivery Note Date
Dispatched through	Destination
	RAIPUR
Bill of Lading/LR-RR No.	Motor Vehicle No.
	CG13LA5273

Terms of Delivery

SI No.	Description of Goods	HSN/SAC	GST Rate	Quantity	Rate	per	Amount
1	DOLOCHAR(DUST)	26219000	18 %	37.420 MTS	150.00	MTS	5,613.00
	CGST@9% on Sales SGST@9% On Sales				9	% %	505.00 505.00
	Total			37.420 MTS			6,623.00

Amount Chargeable (in words)

E. & O.E

## Indian Rupees Six Thousand Six Hundred Twenty Three Only

HSN/SAC	Taxable	CGST		SGST/UTGST		Total
	Value	Rate	Amount	Rate	Amount	Tax Amount
26219000	5,613.00	9%	505.00	9%	505.00	1,010.00
Total	5,613.00		505.00		505.00	1,010.00

Tax Amount (in words): Indian Rupees One Thousand Ten Only

Company's PAN

: AAHCS4472N

Declaration

Certified that the particulars given above are true & correct and

the amount indicated represents the price actually charged & there is no flow of additional consideration directly or indirectly

from the buyer.

Company's Bank Details

A/c Holder's Name : SATYA POWER & ISPAT LTD

Bank Name

SBI CC A/C (30007672676)

A/c No.

30007672676

Branch & IFS Code : SME, Branch, Bilaspur & SBIN0004177

SWIFT Code

for SATYA POWER AND ISPAT LTD(23-24)



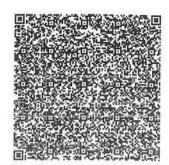
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a618d60e335c4fd1

Ack No.

: 182313463425710

Ack Date 24-Apr-23





SATYA POWER AND ISPAT LTD(23-24)

Consignee (Ship to)

Mahendra Sponge and Power Ltd.

Plot No 76-77, Phase-II,

Siltara Industial Area, Siltara, Raipur - 493111

GSTIN/UIN State Name 22AADCM5765E1ZN : Chhattisgarh, Code: 22

Buyer (Bill to)

Mahendra Sponge and Power Ltd.

Plot No 76-77, Phase-II.

Siltara Industial Area, Siltara, Raipur - 493111

GSTIN/UIN

: 22AADCM5765E1ZN

State Name

: Chhattisgarh, Code: 22

Invoice No.	Dated			
SPIL/23-24/105	24-Apr-23			
Delivery Note	Mode/Terms of Payment			
Reference No. & Date.	Other References			
MSPL/23-24/01 dt. 24-Apr-23				
Buyer's Order No.	Dated			
MSPL/23-24/01	24-Apr-23			
Dispatch Doc No.	Delivery Note Date			
Dispatched through	Destination			
	RAIPUR			
Bill of Lading/LR-RR No.	Motor Vehicle No.			
	CG22J9185			
Terms of Delivery				

SI	Description of Goods	HSN/SAC	GST	Quantity	Rate	рег	Amount
No.			Rate				
1	DOLOCHAR(DUST)	26219000	18 %	34.340 MTS	150.00	MTS	5,151.00
	CGST@9% on Sales SGST@9% On Sales				9 9	% %	464.00 464.00
0	Total			34.340 MTS			6,079.00
Am	ount Chargeable (in words)						E. & O.E

Indian Rupees Six Thousand Seventy Nine Only

HSN/SAC	Taxable	CGST		SGST/UTGST		Total	
	Value	Rate	Amount	Rate	Amount	Tax Amount	
26219000	5,151.00	9%	464.00	9%	464.00	928.00	
Total	5,151.00		464.00		464.00	928.00	

Tax Amount (in words) 👙 Indian Rupees Nine Hundred Twenty Eight Only

Company's PAN

AAHCS4472N

Company's Bank Details

Certified that the particulars given above are true & correct and

A/c Holder's Name : SATYA POWER & ISPAT LTD Bank Name

the amount indicated represents the price actually charged &

: SBI CC A/C (30007672676)

: 30007672676

there is no flow of additional consideration directly or indirectly

Branch & IFS Code : SME, Branch, Bilaspur & SBIN0004177

from the buyer.

SWIFT Code

A/c No.

for SATYA POWER AND ISPAT LTD(23-24)



Authorised Signatory

ower And Isp

SUBJECT TO BILASPUR JURISDICTION This is a Computer Generated Invoice

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Ack No.

182314391998442

Ack Date 12-Sep-23

SATYA	POWER	AND	ISPAT	LTD(23-24)
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SPAI	L1D(23-24)	ı

-24)	
	5

Consignee (Ship to)

SEETA GLOBAL PRIVATE LIMITED

Nagar Nigam Colony, House No 13,

Swami Atmanand Ward, Ward No 39/17/13, Raipur

Raipur, Chhattisgarh, 492005

GSTIN/UIN State Name : 22ABGCS3324P1Z6

: Chhattisgarh, Code: 22

Buyer (Bill to)

**SEETA GLOBAL PRIVATE LIMITED** 

Nagar Nigam Colony, House No 13,

Swami Atmanand Ward, Ward No 39/17/13, Raipur

Raipur, Chhattisgarh, 492005

GSTIN/UIN

: 22ABGCS3324P1Z6

State Name

: Chhattisgarh, Code: 22

Invoice No.	Dated				
SPIL/23-24/772	12-Sep-23				
Delivery Note	Mode/Terms of Payment				
Reference No. & Date.	Other References				
Buyer's Order No.	Dated				
Dispatch Doc No.	Delivery Note Date				
Dispatched through	Destination				
	RAIPUR				
Bill of Lading/LR-RR No.	Motor Vehicle No.				
	CG10C7950				

Terms of Delivery

SI No.	Description of Goods	HSN	/SAC	GST Rate	Quantity	Rate	per	Amount
1	DOLOCHAR(DUST)	26219	000	18 %	26.560 MTS	300.00	мтѕ	7,968.00
	CGST@9% on Sales SGST@9% On Sales					9	%	717.00 717.00
	Total				26.560 MTS			9,402.00

Amount Chargeable (in words)

E. & O.E

## Indian Rupees Nine Thousand Four Hundred Two Only

HSN/SAC	Taxable	(	CGST	SGS	T/UTGST	Total
	Value	Rate	Amount	Rate	Amount	Tax Amount
26219000	7,968.00	9%	717.00	9%	717.00	1,434.00
Total	7,968.00		717.00		717.00	1,434.00

Tax Amount (in words): Indian Rupees One Thousand Four Hundred Thirty Four Only

Company's PAN

: AAHCS4472N

Company's Bank Details

Declaration Certified that the particulars given above are true & correct and

the amount indicated represents the price actually charged &

there is no flow of additional consideration directly or indirectly from the buyer.

A/c Holder's Name : SATYA POWER & ISPAT LTD

: SBI CC A/C (30007672676) Bank Name A/c No.

30007672676

Branch & IFS Code : SME, Branch, Bilaspur & SBIN0004177

SWIFT Code

for SATYA POWER AND ISPAT LTD(23-24)

Authorised Signatory

Satya Power And Ispat Ltd.

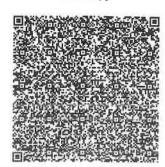
6a997044baeff56e42094c45547a8b9b45964a789059dce94-

eac52872aafcd5f

Ack No.

: 182314391964959

Ack Date 12-Sep-23





SATYA POWE	R AND ISPA	AT LTD	(23-24)
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	.,	OTTLIC	AIID	IOI AI	LID(20-27)

SPIL/23-24/771	12-Sep-23					
Delivery Note	Mode/Terms of Payment					
Reference No. & Date.	Other References					
Buyer's Order No.	Dated					
Dispatch Doc No.	Delivery Note Date					

Dated

Destination

Motor Vehicle No.

CG10M5800

RAIPUR

Raipur, Chhattisgarh, 492005 GSTIN/UIN

Consignee (Ship to)

# 22ABGCS3324P1Z6

State Name

: Chhattisgarh, Code : 22

Buyer (Bill to)

# SEETA GLOBAL PRIVATE LIMITED

SEETA GLOBAL PRIVATE LIMITED Nagar Nigam Colony, House No 13,

Nagar Nigam Colony, House No 13,

Swami Atmanand Ward, Ward No 39/17/13, Raipur

Swami Atmanand Ward, Ward No 39/17/13, Raipur

Raipur, Chhattisgarh, 492005

GSTIN/UIN

: 22ABGCS3324P1Z6

State Name

: Chhattisgarh, Code: 22

Terms	of	Delivery	

Dispatched through

Bill of Lading/LR-RR No.

Invoice No.

SI No.	Description of Goods	HSN/SAC	GST Rate	Quantity	Rate	рег	- Amount
1	DOLOCHAR(DUST)	26219000	18 %	31.770 MTS	300.00	MTS	9,531.00
	CGST@9% on Sales SGST@9% On Sales				9 9	% %	858.00 858.00
Δ	Total count Chargeable (in words)			31.770 MTS			11,247.00 E. & O.E

Indian Runees Fleven Thousand Two Hundred Forty Seven Only

indian Nupees Lieven Thousand Two nundied Porty Seven Only							
HSN/SAC	Taxable	CGST		SGST/UTGST		Total	
	Value	Rate	Amount	Rate	Amount	Tax Amount	
26219000	9,531.00	9%	858.00	9%	858.00	1,716.00	
Total	9.531.00		858.00		858.00	1,716,00	

Tax Amount (in words): Indian Rupees One Thousand Seven Hundred Sixteen Only

Company's PAN

: AAHCS4472N

Company's Bank Details

Declaration

A/c Holder's Name : SATYA POWER & ISPAT LTD

Certified that the particulars given above are true & correct and the amount indicated represents the price actually charged &

Bank Name SBI CC A/C (30007672676) A/c No.

there is no flow of additional consideration directly or indirectly

30007672676

SME, Branch, Bilaspur & SBIN0004177

from the buyer.

Branch & IFS Code : SWIFT Code

for SATYA POWER AND ISPAT LTD(23-24)



Authorised Signatory

Salya Power And Ispat Ltd.



518

संचालक मरोद्य की सत्यापाव क्रिक एक इस्तात लिमिटेड गुडाम वेचायत जातेश जिला विकास

"Te" IT

विषय - भेरे एवड के ममीन में उस्ट निरंबीन के सिम्बंदा में

मिछेदय

सनम निवेदन है कि में शाहा निवासी दें जो केरे खेत के उत्तराह जादा कार्या किर है। मिले के कारण हत्य पर वाना न्याह ना है जिसकी रविषय ने 1006 रका में 5.35 हर्की जिसके महिने कोरे शिवासी नहीं है हिने उगम पैयायत गांगेरी को भी कीरे

अति क्षमा हार इसकी की व्या करें

इस्ट्रपूर्य गुराम क्रियाधर्म

214121

ग्राम पंचायत

वि.ख.बिल्हा,जि.बिल स्वर हिं।

शाहेडन

वागुधा सिंह

ग्याम शतीश

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Satya Power And Ispat Ltd.

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संनालक महोदम रमत्यापाव (१०६ इस्पान निमिरे। ग्राम ग्रीमे जिला किलास्य

विषय - इत्य मरियल भारवाने के लक्बंध के

महोदय

स्तिम निर्ण हिन्छ ज्याम प्रमापत जातो ही के का तर्गत को डाइडा जिल्ला रवस्तरा निर्माण हिन्दी. रक्का निर्णा की जिल्ला का पति तरिष्ट का पति तरिष्ट

सरपंच ग्राम पंचायत-गती वि.ख.बिल्हा,जि.बिलासप

अलदीप सरपेय १९१४ पंयापत गरी

Satya Power And Ispat Ltd.

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छत्तीसगढ़ CHHATTISGARH

S 662054

# **MEMORANDUM OF UNDERSTANDING**

THIS **AGREEMENT** is made at Bilaspur, on this 28th day of the July of the year Two Thousand Twenty-Three (28/07/2023).

## **BETWEEN**

M/S. SATYA POWER ISPAT LIMITED (hereinafter referred to as 'SPIL'), a well-established and aggressively growing limited company established in 2008 is leading manufacturer & supplier of Sponge Iron in Chhattisgarh State having a state of art Sponge iron manufacturing unit with a capacity of 100 TDP x 3 KILN, having PAN NO. AAHCS4472N and having its registered office at 1st Floor, V.R. Plaza, Link Road, Bilaspur (Chhattisgarh) - 495001, represented by its Managing Director Mr. Shikhar Agrawal (Hereinafter Referred to as "The FIRST Party", which expression shall unless repugnant to the context or meaning thereof shall mean and include its Successors, Business, Assignees, etc.) on the FIRST PART.

Agrawal Infrabuild Private Limited

AND

Salya Power And Ispat Ltd.

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Director

Satya Powark Ispat Ltu

Director

M/S. AGRAWAL INFRABUILD PVT. LTD. (hereinafter referred to as 'AIPL' for short), a company incorporated and registered under the provisions of the Companies Act, 1956, having PAN NO. AAFCA6636C, and is indulged in road construction projects, having its Regional office at Plot No- 18/1180/3220 & 18/1180/3229, 3rd Floor, Nayan Tower, Near Khandagiri Square, Khandagiri, Bhubaneswar, Khordha, Odisha - 751030, represented by its Managing Director Mr. Ramavtar Agrawal (Hereinafter referred to as "The SECOND Party" which expression shall unless repugnant to the context or meaning thereof shall mean and include its successors, assignees, etc.) on the SECOND PART.

## WHEREAS:

- The FIRST Party (SPIL), Satya Power & Ispat Limited (SPIL) is, interalia engaged in the business activities relating to Manufacturing of Sponge Iron Generating Accretion Slag & wet scrapper slag. Quality has been the essence of every activity, and the company has consistently maximized the utilization of its resources.
- 2. The SECOND Party (AIPL), Agrawal Infrabuild Pvt Ltd (AIPL), is actively involved in executing road construction projects.
- 3. The party of the Second Part has agreed to Procure and use 'Accretion Slag & wet scrapper slag from the Party of the First part for the purpose of road construction as per the MoRTH Guidelines. First part as their member and will ensure that the Party of the First Part will dispose Accretion Slag & wet scrapper slag generated at its facility as per the terms and conditions stated hereunder which have been mutually agreed to between both the parties.

# NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

# 1. DEFINITIONS AND INTERPRETATIONS:

- 1.1 "TIME" shall be stated in Hours and shall mean Indian Standard Time.
- 1.2 "WEEK" means a period of seven (7) consecutive days beginning from the first day of the week.

  Agrawal Infrabuild Private Limited

Satya Power And Ispat Ltd.

Directo

Chacto

Satya Power And Ispat Ltd.

- 1.3 "MONTH" means a period beginning at 8.00 hours on the first day of Calendar Month and ending at 8.00hours on the first day of succeeding Calendar Month.
- 1.4 "YEAR" means a period of three hundred and sixty five (365) consecutive days or three hundred and sixty six (366) consecutive days when such period includes a twenty ninth (29th) day of February beginning at 8.00 hours from a day.
- 1.5 "FINANCIAL YEAR" means a period of three hundred and sixty five (365) consecutive days or three hundred and sixty six (366) consecutive days when such period includes a twenty ninth (29th) day of February beginning at 8.00 hours from a day of first April.
  - 1.6 "SPIL" means 'Satya Power Ispat Limited'
  - 1.7 "AIPL" means 'Agrawal Infrabuild Private Limited'
- 1.8 "CECB" means 'Chhattisgarh Environment Conservation Board' (a state pollution control board).
- 1.9 The headings of or title to the Clauses in this AGREEMENT shall not be deemed to be a part thereof or be taken into consideration in the interpretation or construction thereof of the AGREEMENT.
- 1.10 Words imparting the singular only also include the plural and vice versa where the contexts so require.
- 1.11 The present agreement is entered into by 'AIPL' for Procurement and Disposal of Accretion Slag & wet scrapper slag generated by the Party of the First Part.

Agrawal Infrabuild Private Limited

r And Ispat Ltd.

Directo

Satya Power And Ispat Ltd.

# 2. SCOPE OF WORK:

- 2.1 The FIRST Party (SPIL) agrees to collaborate with the SECOND Party (AIPL) for the disposal of all 'Accretion & Wet Scrapper Slag' generated by the sponge iron plant including transportation.
- 2.2 The transportation of this Accretion Slag & wet scrapper slag should be done via closed tipper trucks.
- 2.3 The SECOND Party agrees to ensure that the 'Accretion & Wet Scrapper Slag' received at its facility will be used of in accordance with the terms and conditions of this Agreement for executing road construction projects.

# 3. PERIOD OF AGREEMENT

- 3.1 This Agreement shall come into effect on the date of signing and shall remain valid for a period of 5 years unless terminated earlier by mutual agreement.
- 3.2 Either party may terminate this Agreement with a written notice of one (1) months if the other party breaches any material term or condition of this Agreement.

# 4. EXTENSION PERIOD OF AGREEMENT:

4.1 If the Party of the First Part wishes to send its Accretion Slag & wet scrapper slag after the expiry of the present Agreement, it shall give five (5) months advance notice to 'AIPL' of its desire of extended period of facility and 'AIPL' shall, subject to the availability of space, consider the request and may in its absolute discretion, offer terms for the fresh Agreement. All the parties hereto shall, after reaching an Agreement on the offered terms, execute a fresh Agreement at least one (1) month before the date expiry of this Agreement.

Agrawal introduced Private Limited

Director

Satya Power And Ispat Ltd.

Salva FOX

Director



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# 5. PAYMENT TERMS:

- 5.1 The SECOND Party shall pay the FIRST Party a mutually agreed-upon rate of Rs. 50 per MT loaded to truck exclusive of taxes (as per actuals).
- 5.2 Payment shall be made within 45 days from the date of receipt of an invoice from the FIRST Party.

# 6. COMPLIANCE WITH APPLICABLE LAWS:

6.1 Both parties agree to comply with all applicable laws, regulations, and guidelines related to the disposal of 'Accretion & Wet Scrapper Slag.'

# 7. DEFAULT:

7.1 If the Party of the First Part fails and /or defaults in the discharge of any of his obligation under the present Agreement, then 'AIPL' shall have discretion to (i) refuse to accept Accretion Slag & wet scrapper slag of the Party of the First part for disposal without assigning any reason.

# 8. LAWS GOVERNING THE AGREEMENT:

8.1 The present Agreement shall be subject to Indian Laws, rules and regulations and notifications etc. issued under such laws.

# 9. TERMINATION OF AGREEMENT:

9.1 Party of the First Part can terminate this Agreement after giving a written Notice of at least 30 days to the other party. The provision relating to minimum charges shall be applicable, also during the notice period. Agrawal Infrabuild Private Limited

Selya Power And Ispat Ltd.

Director

Satya Power And Ispat Ltd.

# 10. JURIDICTION:

10.1 Subject to the provisions of Clauses of the present Agreement, 'SPIL' and the Party of the Second Part ('AIPL') mutually agree that the Courts in Chhattisgarh only shall have jurisdiction for all the disputes/differences arising out of this Agreement.

# 11. CONFIDENTIALITY:

- 11.1 Both parties agree to maintain the confidentiality of any proprietary or sensitive information disclosed during the term of this Agreement.
  - 11.2 This confidentiality obligation shall survive the termination of this Agreement.

# 12. ARBITRATION:

12.1 In case of any dispute or difference of opinion arising out of the present Agreement between all parties, the Matter shall be referred to an Arbitrator one to be appointed by the party of the first part and one by the party of the second part and the appointed arbitrator shall appoint third arbitrator as umpire, whose decision on the issue shall be final and binding on all the parties.

Agrawal Infrabuild Private Lington

Directo

Salva Poway And Ispat Ltd.

Director

Satya Power And Ispat Ltd.

IN WITNESS WHEREOF, the parties hereto acting through their properly constituted representatives have set their hands to cause this AGREEMENT signed and executed in their respective names and on their behalf.

For M/S. SATYA POWER ISPAT LIMITED (SPIL):

Satya Power And Ispat Ltd.  Director  (Signature)  Mr. Shikhar Agrawal  Managing Director
Witness:
1. Name: Jitesh Chawda So Late shri Navin chawda Tikrafara, Bilas Pur
For M/S. AGRAWAL INFRABUILD PVT. LTD. (AIPL):
Director
(Signature) Mr. Ramavtar Agrawal Managing Director
Witness:
1. Name:  Hally State Repumer Mark Many  Sto cel-e dent 28.7. 23  Satya Power And Ispa  E 12 91012 (8.31)

Satya Power And Ispat Ltd.



### CHHATTISGARH ENVIRONMENT CONSERVATION BOARD

PARYAVAS BHAWAN, NORTH BLOCK, SECTOR -19, NAVA RAIPUR ATAL NAGAR, RAIPUR (C.G.) 492002

E-mail: hocecb@gmail.com, Ph. No. 0771-2512220

No. 9526/HSMD/HO/CECB/2021

Raipur, Date 03 /02 /2021

To.

M/s Satya Power and Ispat Limited, Village - Gatauri, Block - Bilha, District - Bilaspur (C.G.)

Sub:-

Grant of authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.

Ref:-

Your online application no. 6221552 dated 05/10/2020 & subsequent correspondence ending dated 06/01/2021.

---:00:----

The authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 is hereby granted for the period of **Five Years** i.e. from **02/02/2021 to 01/02/2026**. The details of authorization along with terms & conditions are given as per below:-

### FORM 2 [See rule 6 (2)]

FOR GRANT OR RENEWAL OF AUTHORISATION BY STATE POLLUTION CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

- 1. Number of authorization 491/HO/HSMD/CECB/NAVA RAIPUR ATAL NAGAR, RAIPUR.
- 2. Reference of online application no. 6221552 dated 05/10/2020 & subsequent correspondence ending dated 06/01/2021.
- 3. The operator of facility i.e. occupier M/s Satya Power and Ispat Limited, Village Gatauri, Block Bilha, District Bilaspur (C.G.) is hereby granted authorization based on the signed inspection report from RO for Generation, Collection, Storage and Disposal of hazardous wastes in the premises situated at Village Gatauri, Block Bilha, District Bilaspur (C.G.).

Satya Power And Ispat Ltd.

### **Detail of Authorisation**

Sr. No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilization or coprocessing etc.	Quantity (Tonnes/Annu m)
I,	Used or spent oil (Schedule-I, Cat.No 5.1)	Lubrication in machinery/Sale to authorized recyclers	0.50 KL/Annum
2.	Empty barrels/containers/liners contaminated with hazardous chemicals /wastes (Schedule-I, Cat. No. 33.1)	Sale to authorized recyclers	24 Nos./i-nnum
3,	Contaminated cotton rags or other cleaning materials (Schedule-I, Cat. No. 33.2)	Incineration in the kiln of the plant itself/Co- processing in cement kiln	0.2 MT/Annum

- (1) The authorization shall be valid for the period of Five Years i.e. from 02/02/2021 to 01/02/2026.
- (2) The authorization is subject to the following conditions:

### TERMS & CONDITIONS OF AUTHORIZATION

- 1. The authorization shall comply with the provisions of Environment (protection) Act, 1986 and the rules made there-under.
- 2. The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the Chhattisgarh Environment Conservation Board.
- 3. The person authorized shall not rent, lend, sell transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Chhattisgarh Environment Conservation Board.
- 4. Any unauthorized change in personnel, equipment, or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorization.
- 5. The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.
- 6. The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty".
- 7. It is the duty of the authorized person to take prior permission of the Chhattisgarh Environment Conservation Board to close down the facility.
- 8. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
- 9. Industry shall prepare emergency response plan (ERP) and ensure implementation the same at the event of any accident occurs due to handling and transporting of hazar@www.erApetspRCBd.

director

guideline.

- 10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed of as per standard operating procedures/guidelines issued by CPCB from time to time.
- 11. An application for the renewal of an authorization shall be made three months before the expiry of authorization as laid down in the Rules.
- 12. Annual return in form IV shall be filed by June 30th for the period ending 31st March of the last financial year.
- 13. The wastes shall be collected and stored properly with adequate safety measures as per rule.
- 14. Industry shall submit On site Emergency Plan approved by Department of Industrial Health and Safety within 03 months from the date of issue of this letter.
- 15. Authorized person shall comply with the provisions of rule 17, 18 and 19 for packing, labeling and transport of Hazardous Waste.
- 16. The authorized person should maintain the record of Hazardous Waste as per Form-3 of Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
- 17. The occupier shall follow the guidelines (if any) issued by Central Pollution Control Board or MoEF & CC for management of Hazardous waste from time to time.
- 18. The industry shall display data outside factory gate on quantity and nature of hazardous chemicals and wastes being used in the plant, water and air emissions and solid wastes generated within the factory premises.
- 19. Industry shall ensure disposal of hazardous waste generated during the production process through authorized recycler/Co-processing in cement plant/captive disposal facility/arrangement for sharing of authorized disposal facility/common TSDF as per rule. Failing which this authorization shall be treated as cancelled and appropriate action would be initiated against the industry.
- 20. Industry shall create new website for Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 and upload all the information above the waste in the website.
- 21. The waste must be given thermal/biological/physico-chemical treatment; the waste should be completely dewatered, detoxified, and proper conditioned and any possible recovery is made before their disposal.
- 22. Industry shall ensure that transportation of hazardous wastes shall be carried out through GPS enabled dedicated vehicles of authorized transporters only.
- 23. The industry should constitute a hazardous waste management cell to take care of the management aspect to the hazardous waste generated in the plant.
- 24. An on-site storage of the hazardous wastes for a maximum period of 90 days should be provided and it shall be ensured that there is no leakage or seepage from the surrounding walls or bottom. The site should be covered and properly protected to prevent the entry of rain water in storage area.
- 25. At least four nose of piezometric points should be provided around the storage site of H.W. to monitor the leaching of the waste and the monitoring report of the same shall be submitted to the board every six monthly. Each type of waste shall be stored in a separate storage cell.

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- 26. The discarded containers of Hazardous waste and chemical shall not be used for storage of food grade products. At the storage site "Hazardous waste storage site & danger signboard" shall be provided with all safety devices.
- 27. In the event of any accident due to handling of hazardous waste the authorized person must inform immediately to the Concerned Regional Office and H.O., Atal Nagar, Raipur of the Board by fax/telephone or by E-mail about the incident and details report be sent in form no. 11 [see rule 22].
- 28. The authorization obtained by the Chhattisgarh Environment Conservation Board should be prominently displayed.
- 29. Used batteries shall be disposed of as per the Batteries (Management & Handling) R 1les, 2001.
- 30. Board reserves the right to cancel/amend the above condition and add new conditions as and when deemed necessary.

**Member Secretary** 

C.G. Environment Conservation Board Nava Raipur Atal Nagar, Raipur (C.G.)

Endt. No. 9527/H.O./HSMD/CECB/2021

Atal Nagar, Raipur, Date 0 3 /02 /2021

Copy to: Regional Officer, Regional office, Chhattisgarh Environment Conservation Board, Bilaspur (C.G.) please ensure compliance and report, if any condition/conditions are violated by the industry.

Sd/Member Secretary
C.G. Environment Conservation Board
Nava Raipur, Atal Nagar, Raipur (C.G.)

Signature Not Veritied

Digitally Signed by :R P

Date: 2021.02.04 18:50:34 IST

Satya Power And Ispat Ltd.



## CES ANALYTICAL AND RESEARCH SERVICES (1) PVT. LTD.

CIN: U74999MP2020PTC052747

### TEST REPORT

	LOI ILLI OILI					
Name & Address of the Customer	Test Report No:- CES/LAB/Sludge/24/21					
To,	Dispatch No:					
M/s Satya Power And Ispat Limited.	Issue Date: 21.02.2024					
Address: 1st V.R Plaza. Link Road,	Client Ref: Nil					
Bilaspur (C.G.) 495001	Date : Nil					
Qty: 1 No. x 1 kg	Sampling Details					
Method of test : Given Below	Date of Collection	: 12.02.2024				
Packing :- Plastic Bag	Date of Receipt	: 14.02.2024				
Sample Condition at receipt: Packed	Period of testing	: 14.02.2024 to 21.02.2024				
Sample collected by: Client	Method of sampling	: As Per Client				
Sample Discipline: Chemical Testing Sub Group: Slag	Page No.	1 of 2				
No. of Sampling Locations -01	Serial No. of samples	21/1				

S. No.	Test Parameters	Unit	Method No.	of Hazardous & Other Wastes (Management & Transboundary Movement) Rules, 2016	
	TCLP Extract (Toxicit	y Charac	teristic Leaching Procedure)		
1	Arsenic as As	Mg/L	APHA, (23rd Edition), 3114-B	5.0	0.59
2	Cadmium as Cd	Mg/L	APHA, (23rd Edition), 3114-B	1.0	0.32
3	Lead as Pb	Mg/L	APHA, (23rd Edition), 3114-B	5.0	1.20
4	Mercury as Hg	Mg/L	APHA, (23rd Edition), 3114-B	0.2	0.08
5	Nickel as Ni	Mg/L	APHA, (23rd Edition), 3114-B	20.0	5.23
6	Zinc as Zn	Mg/L	APHA, (23rd Edition), 3114-B	250.0	33.42
7	Barium as Ba	Mg/L	APHA, (23rd Edition), 3114-B	100.0	18.20
8	Selenium as Se	Mg/L	APHA, (23rd Edition), 3114-B	1.0	0.52
9	Ammonia as NH <sub>3</sub>	Mg/L	APHA, (23rd Edition), 3114-B	50.00	9.00

For CES Analytical and Research Services (1) Pvt. Ltd

NEELAM UPADHYAY TECHNICAL MANAGER

The Results relate only to the sample tested/ sampled

Note:-The Report will not valid for any legal case, if prior permission not taken from CESANTOSH KHANTAL ----\*End of Report\*-----

QUALITY MANAGER

ya Power And Ispat Ltd.



### CES ANALYTICAL AND RESEARCH SERVICES (1) PVT. LTD.

CIN: U74999MP2020PTC052747

### TEST REPORT

	DDI KEI OKI					
Name & Address of the Customer	Test Report No:- CES/LAB/Sludge/24/21					
To,	Dispatch No:					
M/s Satya Power And Ispat Limited.	Issue Date: 21.02.2024					
Address: 1st V.R Plaza. Link Road,	Client Ref: Nil					
Bilaspur (C.G.) 495001	Date : Nil					
Qty: 1 No. x 1 kg	Sampling Details					
Method of test : Given Below	Date of Collection	: 12.02.2024				
Packing :- Plastic Bag	Date of Receipt	14.02.2024				
Sample Condition at receipt: Packed	Period of testing	: 14.02.2024 to 21.02.2024				
Sample collected by: Client	Method of sampling	: As Per Client				
Sample Discipline: Chemical Testing Sub Group: Slag	Page No.	: 2 of 2				

S. No.	Test Parameters	Unit	Standard as per Schedule II of Hazardous & Other Wastes (Management & Transboundary Movement) Rules, 2016	Result Obtained
	TCLP Extract (Toxicity Char	racteristic Lea	aching Procedure)	
10	Manganese as Mn	Mg/L	10.0	4.92
11	Silver as Ag	Mg/L	5.0	0.11
12	Ammonia as NH <sub>3</sub>	Mg/L	50	13.80
13	Fluoride	Mg/L	180	15.60
14	Nitrate	Mg/L	1000	52.11
15	Sulphide as H <sub>2</sub> S	Mg/L	5.0	0.74
16	Copper	Mg/L	25	5.01
17	Molybdenum	Mg/L	350	16.31

For CES Analytical and Research Services (1) Pvt. Ltd

ked by:

NEELAM UPADHYAY TECHNICAL MANAGER

The Results relate only to the sample tested/ sampled

Note:-The Report will not valid for any legal case, if prior permission not taken from CES.

----\*End of Report\*----

Authorized Signatory

SANTOSH KHANTAL QUALITY MANAGER

Satya Power And Ispat Ltd.



" Armesade - F"

### DIRECTORATE, INDUSTRIAL HEALTH & SAFETY, RAIPUR (C.G.)

Block-III, 2nd Floor, Indravati Bhawan, Naya Raipur (C.G.)

e-mail - dihscg@gmail.com Ph. No. - 0771-2442360

Raipur, dated: 4/4/2022

Application No.: 959848

To.

The Occupier. SATYA POWER AND ISPAT LIMITED RATANPUR ROAD, GRAM: GATAURI, POST OFFICE SEMARTAL, BILASPUR (C.G.)

Sub :- ON-SITE EMERGENCY PLAN.

### Ref :- Your documents on the subject dated 26/11/2021

Please be informed that documents (placed below containing pages (111 duly verified by the occupier) in which the occupier has disclosed the information related to hazards at his installation in compliance of the section 41-B of the factories Act, 1948 and which also describes his On-Site Emergency Plan (After supplementing certain modification by the MAHC Cell distinctively marked on the plan) is hereby notified final with the following stipulations:-

- (i) That in the case any relevant information as required under the section 41-B of the Factories Act, 1948, If has not been disclosed this notification does not provide any exemptin in this regard and the occupier himself is liable for concealing the
- (ii) That the documents will be subjected for review :-
- (a) Generally after a period of two years from the date of issue of this order.
- (b) During any intervening period of two years if it is instructed to do so by this ceil.

OR

- (c) Invariably, when any change in the plant, machinery, Building, Structure, substance, storage or the manufacturing processes/operations is intended by the occupier or his factory persons;
- (iii) That the documents will have to be reviewed (as above) always in consultation with this cell and it will be occupier's liability to provide reasonable time for review and get notified final for further period;
- (iv) That suitable training/mock-drill/exercise be arranged at the factory to make all concerned familiar with their duties/ responsibilities as outlined in the on-site emergency and be well trained to act accordingly at any emergency and save lives as well as the property:
- (v) That reports/ observation of mock-drills/rehearsal or action at any emergeny situation that might have arisen, shall be furnished by the factory management to this cell to assess efficiency of the plan.
- (vi) The necessary copies of this plan or part thereof be got multiplied by the factory management and provide to all concerning statutory authorities and other persons and also placed at designated emergency control centre in an accessible place to all concerned in the factory.
- (vii) That in case of failure to comply with the stipulations or the relevant provisions of the law, not with standing legal proceeding to which the occupier may be subjected, he himself will bear (for any suspension/refusal rejection of his licence to work the factory) the liability of such action.

Encl.:- As above

AMRIT

Digitally signed KUMAR KUMARXALXO XALXO 19.23 42 -05'30

Chief Inspector of Factories

Govt. of C.G. Raipur Satya Power And Ispat Ltd.

### ONSITE EMERGENCY PLAN 2021

OF



### M/s SATYA POWER AND ISPAT LTD

Village Gatauri, Ratanpur Road, Block Bilha, District Bilaspur, Chhattisgarh 495009

Mobile: 89820-20000 Phone: 07752-231737 Email: spipl@hotmail.com

Phone No. 07752 231737

Email: spipl@hotmail.com

### Submitted by SHRI SHIKHAR AGRAWAL Occupier and Director

### **OSEP Consultants** Er.AJAY AGRAWAL

(BE (Mech)Hons, Safety auditor, Insurance surveyor & Loss Assessor, Energy Auditor, Industrial arbitrator & project designer

#### PIONEER A.D.CORPORATION

Qr.No.H1/8A, Narmada Nagar, Near Mangla Chowk, Gaurav Path, (Kislay Boutique Gali), BILASPUR (CG) 495001

Mobile: 7587448777, 9300489218, 9827167929 email: alekh93@gmail.com, www.pioneerad.in

Satva Power And Ispat Ltd.



**Director** 

Digitally signed Shikhar by Shikhar Agrawal Date: 2021.11.26

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### CHECKLIST FOR ONLINE SUBMISSION OF ONSITE EMERGENCY PLAN

1	Whether the OSEP is new or revised	REVISED
2	List of Hazardous Chemicals being used, produced or generated as byproduct or as waste, in the following table	7.2/Pg 40- 41

S.NO.	NAME OF THE HAZARDOUS CHEMICAL	IS MSDS ENCLOSED	MAX. QTY. OF STORAGE IN TON/KL	PLACE OF STORAGE	MODE OF STORAGE (VIZ. BAGS, U/G OR ABOVE GROUIND STORAGE)	ARRANGEMENTS MADE TO CONTROL DE- CONTAINMENT LIKE DYKE ETC.	OTHER SAFETY ARRANGEMENTS	AREA LIKELY TO BE AFFECTED	LIST OF PPE'S USED DURING HANDLING OF THESE CHEMICALS
1	DIESEL LDO/HSD	YES	14.2 KL	IN SHED	IN DRUM	Keep containers and valves closed when not in use	SAFETY VALVE, SPILL KITS, NOT EXPOSED TO HEAT & LIGHT	SHOP FLOOR	Canister type Gas Mask, Goggles, PVC hand gloves
2	OXYGEN CYLINDER FOR GAS CUTTING	YES	7m³ cylinders X 10Nos	Kept in separate area as per Gas Rules Norms	7m³ cylinders stored in godown	Respiratory protection is required under normal circumstances or during use	1. Cylinders stored in dry, 2. Ventilated area and away from source heat	Godown shop floor	Canister type Gas Mask,
3	LPG FOR GENERAL USE	YES	14.5Kg Each X 3Nos	Kept in separate area as per Gas Rules Norms	3Nos, cylinders kept in administr ative building	Ventilation is required under normal circumstances or during use	1. Cylinders stored in dry, 2. Ventilated area and away from source heat	Administr ative building	Gas leak detector
4	LPG FOR COMMERCI AL USE	YES	19Kg Each X 20Nos	Kept in separate area as per Gas Rules Norms	20Nos cylinders kept in cylinder storage area	Ventilation is required under normal circumstances or during use,	1. Cylinders stored in dry, 2. Ventilated area and away from source heat	Cylinder storage yard	Gas leak detector
3	List & deta	ils of ha	zardous fac	ctories in	the vicini	ity			3.5/Pg 21
4	Details of possible accidents i.e. fire/explosion/gas-release/release of chemicals etc.							emicals	7.7/Pg 45- 46
5	Details of process hazards, risk analysis (vapour dispersion modelling if possible)								7.7.1/Pg 47-52
6	Detailed action plan								Chapter 9/ Pg 67-71
7	Arrangement habitants	nt of ala	rm for intir	nation o	f emergen	cy to the wo	rkers & nea	rby	8.1/Pg 53

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8	Is emergency control center established	8.3/Pg 54- 55
9	Details of emergency lighting arrangement made for illumination for critical places in case of emergency	8.3.3/ Pg 55
10	Is layout plan (please upload digital layout plan) enclosed with distinct marking of hazardous area, escape routes	Pg 111
11	Details of mutual aid arrangement with other factories	8.10/ Pg 64
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14	Is wind direction indicator installed	8.3.2/ Pg 54
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16	Details of hospitalization facilities with details of available beds in the hospital along with their contact nos.	8.7.1/ Pg 60-61
17	Details of pollutants & contaminants present in the work environment	8.11/Pg 64
18	Is roll call system detailed	8.3.4/Pg 55
19	Rehearsal schedule	11.1/ Pg 77
20	Is the nearby habitation including school, police station, bus stop, petrol pump, hotels etc shown in the layout	2.5/Pg 16
21	Brief description of accidents took place in previous years	Annexure 3 : Pg 90
22	Is procedure for informing the government officials laid down in the plan	8.5.1.3/Pg 57
23	Provision for immediately informing the families of affected emoployees	8.3.5/Pg 55
24	Is the plan verified & signed by the occupier	Pg 7
25	Is index given	Page 2-4
26	Are details like name, telephone nos. of outside agencies for requesting help given in the plan	8.6.1/Pg 59
27	Procedure for all clear after emergency is over	9.5.1/Pg 69
28	Post emergency activities	9.5/Pg 69



### VERIFICATION

This is to certify, that the documents and information contained in this revised Onsite Emergency Plan of M/s SATYA POWER AND ISPAT LTD., Village: Gatauri, Ratanpur Road, Block: Bilha, District: Bilaspur (Chhattisgarh) have been thoroughly verified and authenticated by signing on its each page by me before its submission.

The revised Onsite Emergency Plan is submitted herewith to the Director, Industrial Health & Safety, Govt. of Chhattisgarh seeking his kind approval and permission to implement the same at M/s SATYA POWER AND ISPAT LTD., Village: Gatauri, Ratanpur Road, Block: Bilha, District: Bilaspur (Chhattisgarh).

We hereby acknowledge that this Onsite Emergency Plan shall be revised and updated in the event of any change (s) in the plant process, size of the plant, type of the technology, infrastructure, including machinery(s), building(s), storage and manufacturing process and/or deletion or addition made on account of the above under intimation to The Directorate of Industrial Health & Safety, Govt. of Chhattisgarh, for his approval.

We further undertake that in the event of closure of the factory, the hazardous materials stored in the factory shall be disposed-off in a safe and sound manner without affecting risk and danger to the human beings and to the environment and, shall immediately intimate the action taken in this regard to the Directorate of Industrial Health & Safety, Govt. of Chhattisgarh.

Shikhar Digitally signed by Shikhar Agrawal Agrawal Date: 2021.11.26

Satyon Province And Ispat Ltd.

Director

SHRI SHIRHAR AGRAWAL
Occupier and Director

Satya Power And Ispat Ltd.

### **ABBREVIATIONS**

Act	The Factories Act, 1948 (with CG Factories Rules 1962)	
CIC	Chief Incident Controller	
DIC	District Industries Centre	
DRI	Direct Reduced Iron	
ECC	Emergency Control Centre	
ELCB	Earth Leakage Circuit Breaker	
ЕОТ	Electrically Operated Travelling Crane	
ETP	Effluent Treatment Plant	
FO	Furnace Oil	
HIRA	Hazard Identification & Risk Assessment	
KL	Kilo litre	
KP	Key Personnel	
LDO	Light Diesel Oil	
M/c	Machines	
MS	Mild Steel sections	
NH	National Highway	
OEP/OSEP	Onsite Emergency Plan	
ОНС	Occupational Health Centre	
OHSMS	Occupational Health & Safety Management System [OHSMS 45001:2018]	
PAS	Public Address System	
PPE	Personal Protective Equipments	
PM	Preventive Maintenance	
PTW	Permit to Work	
QCD	Quality Control Department	
SPIL	M/s Satya Power & Ispat Ltd., Village Gatauri, Distt Bilaspur CG	
WIC	Works Incident Controller	

Satya Power And Ispat Ltd.

Director

### CHAPTER I PREFACE

### 1.1 | OBJECTIVE OF EMERGENCY PLAN

The Onsite Emergency Plan/Disaster Control Plan is a statutory requirement under section 41-B of Indian Factories Act, 1948 which provides for the compulsory disclosure of information for a factory involving a hazardous process/area/materials, by a Occupier of the factory to Chief Inspector of Factories.

Since this unit M/s Satya Power & Ispat Ltd. Bilaspur also falls under the category of hazardous plant, hence as per the requirement of the Act, it is the responsibility of the Occupier to disclose all information regarding process specific dangers, including worker's health hazards and the measures to overcome such hazards arising from the exposure or handling of the material or substances in the manufacture, transportation, storage and other processes, to the workers engaged in the factory, in a prescribed manner in the form of Onsite Emergency Plan/Disaster Management Plan by Occupier to the competent authority for his appraisal and then to implement the same in factory so that the losses can be minimized under adverse emergency situations.

### 1.2 | NECESSITY OF THE PLAN

Despite of substantial efforts to prevent the accidents in an industry, the possibility of occurrence of an accident having an adverse effect on the workers, environment and property is vital. Hence, a structured plan to mitigate potential emergency situations becomes necessary. This plan will certainly help in reducing all kinds of occupational risks and hazard possible to have impact on the health & safety of employees working inside the plant. Considering all aspects of possible hazards and safety precautions to prevent them further, a structured plan has been proposed to be implemented to face any major accident so that adverse effects arising out of such potential hazards may be minimized with the help of relevant onsite and offsite authorities including public.

Objective of this Onsite Emergency Plan is to create a procedure and infrastructure based on the combined resources of the factory as well as available external services, with a view to minimize damage and losses due to any type of emergency and disaster situation that may arise within the plant premises, which may directly or indirectly affect the employees, the property of the company and the local community.

### 1.3 | VITAL COMPONENTS OF THE ONSITE EMERGENCY PLAN

This Onsite Emergency Plan has been prepared in view of the processes and their complexity applicable to the organization. Following major components have been included in this plan:

a) Hazard Identification & Risk Assessment chart (HIRA) to identify process hazards and associated risk levels

Satya Power And lepat Ltd.

- b) To control or limit any effect that an emergency or potential emergency situation may have at SPIL site, neighboring sites and the surrounding community.
- c) To identify the hazardous processes and assess the available onsite facilities within the factory to overcome such hazards.
- d) To identify casualty & damage, and to carry out the rescue operation and treatment to the persons affected by the emergency.
- e) To safeguard other persons from being affected by such emergency situations.
- f) To minimize the damage to the property and to the environment at a zero level.
- g) To initially contain the impact of incident and ultimately bring the incident under control.
- h) To provide authentic information to outsiders and the media.
- i) To accomplish rehabilitation of the affected persons, if any.
- j) Preservation of relevant records for further use.
- k) To investigate the root cause of adverse emergency situation that has occurred with a concern to prevent its reoccurrence in future.

### 1.4 | BRIEF OVERVIEW

This Onsite Emergency Plan is AN ACTION PLAN FOR HANDLING EMERGENCY SITUATION IN EXISTING INDUSTRY.

Statutory requirement laid down under the Indian Factories Act 1948 followed by CG Factories Rules 1962, with an intention to arrange and gear up the facilities to combat the emergency, if any, in an effective manner to ensure minimum possible losses to the human beings and to the properties involved and to control the situation within least possible time period has given rise to the need for this plan.

This Onsite Emergency Plan has been prepared by M/s Satya Power and Ispat Ltd., Bilaspur, a medium scale unit in operation for manufacturing of 90000TPA capacity sponge iron and 14,40,000TPA capacity coal washery at Village: Gatauri, Ratanpur Road, Block: Bilha, District: Bilaspur (Chhattisgarh).

This emergency plan has been prepared to ring-up all information regarding health and safety hazards and their control measures. Such hazards may arise from the exposure to unsafe conditions or handling of the material or substances during the course of the manufacture, transportation, storage and other main/auxiliary processes. Subsequently, workers engaged in the factory and to the general public living in the vicinity of the factory are subjected to severe hazards with associated risks of different severities. Hence, this plan describes the relevant safety measures required to be adopted in the event of any accident that has a potential to take place. It is

Satya Power And Ispat Ltd.

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expected that this emergency plan shall further help to take precautions to maintain most hazard-free working environment within the factory.

Herewith it is released for all SPIL, Bilaspur workers/ employees (including contract workers) concerning with handling of the emergency if arises, due to any reason whatsoever, related to operation, maintenance and functioning of the plant. As such, all workers shall be adequately trained to actively and sincerely participate in the action plan laid down in this Onsite Emergency Plan, as per role given to them for quick mitigation of emergency situation. It is expected that this emergency plan shall enable the unit to take proactive precautions thereby making it a completely hazard free unit.

We are highly thankful to all the officers of Industrial Health & Safety, Bilaspur who guided and helped us to prepare this plan.

Satya Power And Ispat Ltd.

### CHAPTER - 2 INTRODUCTION OF M/S SATYA POWER AND ISPAT LTD.

### 2.1 | INTRODUCTION

SATYA POWER AND ISPAT LTD. (SPIL) is engaged in the manufacturing of sponge iron (90000TPA Capacity) and coal beneficiation through a coal washery (1440000TPA beneficiation capacity) in their existing unit situated in Village: Gatauri, Ratanpur road, Block: Bilha, District: Bilaspur (Chhattisgarh). The DRI manufacturing and coal beneficiation process is a well established process with so many units under operation in the nearby vicinity with similar technology. With over four decades of experience of the promoters in iron & steel sector, the promoters conceptualized SPIL in 2005 considering the huge demand in market for rolled steel sections.

### 2.1.1 | COMMISSIONING & COMMERCIAL PRODUCTION OF EXISTING UNIT

S.No.	Name of Unit	Date of commissioning/ commercial production
15	Sponge Iron Plant Kiln_1, 100TPD capacity	04.11.2005
2.	Sponge Iron Plant Kiln_2, 100TPD capacity	25.03.2008
3.	Sponge Iron Plant Kiln_3, 100TPD capacity	06.03.2021
4.,	Coal washery, 200TPH capacity	15.09.2016

### 2.1.2 | Product range includes DRI (Sponge iron) manufacturing & coal washery

- 90000MT/year of sponge iron through 3Nos. 100TPD (each) kiln.
- 1440000MT/year of coal beneficiation through 1 No. 200TPH capacity coal washery.

#### 2.1.3 | Production Facilities:

Our manufacturing unit is strategically located in the Central India at Bilaspur district of Chhattisgarh to cater to all parts of country including export market due to availability of basic resources like raw material (iron ore, coal), power (energy), skilled manpower & adequate logistics.

We have made operational a third line of sponge iron manufacturing unit (100TPD capacity) fully equipped with latest machines & material handling equipment to undertake manufacturing within the same premises, and major project work already completed thereof. This is in addition to 2X100TPD DRI plant and 200TPH coal beneficiation plant in operation since long time.

Satva Power And Ispat Ltd.

We also propose a fully equipped ETP system to treat effluents generated designed as per existing production capacity up to 90000 MT/yr of sponge iron and 1440000MT/year of washed coal generation.

### 2.1.4 | Quality Assurance Facilities

Products after manufacturing or beneficiation shall undergo "100% inspection" to satisfy all national and international standards and also as per specific customer's requirement. SPIL has already set-up in-house Mechanical Testing Laboratory equipped with all necessary testing equipments with utmost precision. Organization has engaged a dedicated workforce in various disciplines to serve their elite clients *pan* India. These products are onward supplied to casting & rolling units pan India and also to power generation plants in the local and national market needing these products including government's projects to move up the value chain for our clients. Chemical parameter testing is being carried out through external laboratories preferably having NABL accreditation.

SPIL has adopted the latest technology to obtain optimum productivity at lowest cost maintaining best product quality. As the organization has already completed erection and commissioning job of 3<sup>rd</sup> DRI kiln, we have already established commercial arrangement with the manufacturers and established suppliers of India for raw materials supply on long term basis.

Main focus of the company is into catering to the demand of end users by supplying them quality products with minimal rework and with utmost customer satisfaction. SPIL also have sufficient number of qualified manpower to look after sales support after execution of orders efficiently within the specified time period. The company's existing manufacturing unit, as illustrated above, is ideally located and easily accessible through all corners of the nation by rail and road.

Our unit has a structured methodology to identify its legal and statutory requirements and to strictly monitor the compliances thereof. Our unit has applied for registration with Director, Industrial Health & Safety, Govt. of Chhattisgarh, for issuance of Factory License as a primary statutory compliance.

### 2.2 | NECESSITY TO ESTABLISH THE UNIT

M/s Satya Power And Ispat Ltd. is a unit established for sponge iron manufacturing and coal beneficiation in their manufacturing unit at village Gatauri of Bilaspur district. SPIL proposes to be a prime organization in Central India region for manufacturing of these products.

As a result, the Promoters/Directors of the firm has established this manufacturing unit for manufacturing under the name & title as M/s SATYA POWER AND ISPAT LTD. at Village: Gatauri, Block: Bilha, District: Bilaspur (Chhattisgarh). Unit has all necessary

Satya Power And Ispat Ltd.

infrastructure to manufacture intended products with utmost quality control facility which is aligned with product specific safety, legal and statutory requirements laid down by State and central government. Organization will have an established safety management system to control and review such legal requirements and Manager (HR & Admin) is authorized to look after such compliances which is finally approved by the Occupier.

### 2.3 | PROMOTERS OF THE FIRM

The company was promoted by **Shri Shikhar Agrawal** who is the **Director and Occupier** of the company. Under his active guidance, the company has been planned to be continuously expanding and diversifying its activities. Other Director's of the organization is enlisted in the following list:

#### 2.3.1 BOARD OF DIRECTORS

S.No.	NAME	DESIGNATION	QUALIFICATION	EXPERIENCE
1,	Shri Pawan Kumar Agrawal, S/o Late Shri Satyapal Agrawal	Managing Director	Graduate	30years
2.	Shri Ramawatar Agrawal, S/o Late Shri Satyapal Agrawal	Director	Graduate	40years
3,	Shri Rupesh Garg, S/o Shri Ramawatar Agrawal	Director	Graduate	20 years
4.	Shri Shikhar Agrawal, S/o Shri Ramawatar Agrawal	Director	Post graduate	12 years
5.	Shri Shashank Agrawal, S/o Shri Pawan Agrawal	Director	Post graduate	2 years

### 2.3.2 | OCCUPIER OF THE FACTORY

### SHRI SHIKHAR AGRAWAL (DIRECTOR)

1st Floor, V. R. Plaza, Shrikant Verma Road Square, Link Road, Bilaspur

(Chhattisgarh) 495001 Phone: 07752-231737 Mobile: 8982020000

Email id: spipl@hotmail.com

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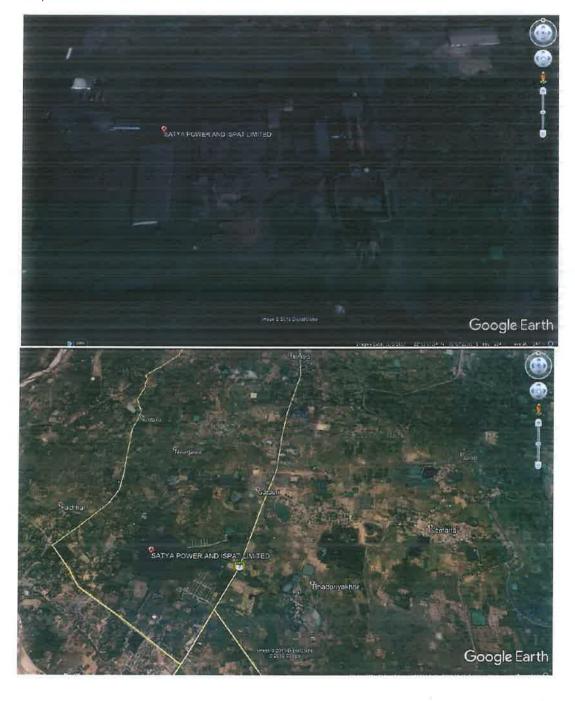
### 2.4 | BRIEF WRITE-UP OF M/S SATYA POWER AND ISPAT LTD.

1.	FACTORY LICENCE NO.	4818/4818//B-1/BSP/2M(i) dtd 23.01.2021 valid upto 31.12.2021
2.	UDYAM AAKANKSHA NO.	11303249570963 issued by District Trade & Industries Centre, Bilaspur dtd 01.12.2016 valid upto 30.11.2019
3.	Consent to Establish (Air) details from Chhattisgarh Pollution Control Board	5780/TS/CECB/2020 dtd 05.10.2020 valid upto 31.08.2025
4.	Consent to Establish (Water) from Chhattisgarh Pollution Control Board	5780/TS/CECB/2020 dtd 05.10.2020 valid upto 31.08.2025
5.	MANUFACTURING RANGE	90000MT/Annum of sponge iron & 1440000MT/Annum of coal beneficiation
6.	INSTALLED CAPACITY	Manufacturing of sponge iron (3X100TPD existing). Coal beneficiation plant (coal washery) having washing capacity of 200TPH.
7.	TECHNOLOGY FOR DRI PLANT & COAL BENEFICIATION	Acceptable technology worldwide. Organization is engaged in manufacturing activities since long with rich experience of process control.
8.	CONNECTED LOAD (ELECTRICAL ENERGY FROM CSEB)	1. Contract demand 600KVA (BP No. 1021820) for coal washery unit 2. Contract demand 800KVA (BP No. 1001182) for sponge iron plant
9.	ENGAGED MANPOWER MEN WOMEN	Below 250 Nos. (Maximum 250 Nos.) 235 Nos. 15 Nos. (FOR HOUSE KEEPING WORK)
10.	WIND DIRECTION	SOUTH WEST to NORTH EAST (NORMALLY), Max wind velocity 4.6m/sec
11.	LATITUDE LONGITUDE ELEVATION	22 <sup>0</sup> 11'10.43 N 82 <sup>0</sup> 07'19.45 E 879.26ft
12.	EMERGENCY ASSEMBLY POINTS	THERE ARE 4NOS. (FOUR) EMERGENCY ASSEMBLY POINTS IDENTIFIED AND EAR MARKED WITHIN THE PLANT:  1. IN FRONT OF PRODUCT HOUSE 2. IN FRONT OF COAL WASHERY 3. NEAR U/G WATER TANK OUTSIDE KILN3 AREA 4. OUTSIDE DG SET AREA NEAR TRANSFER TOWERS These emergency assembly points are indicated in the layout plan of the plant submitted with this report in annexures.

Satya Power And Ispat Ltd.

13.	ECC (EMERGENCY CONTROL	IN	THE	CHAMBER	OF	DIRECTOR
	CENTER)			IN THE		
		BUI	LDING	OF PLANT	(DULY	MARKED
		GRI	EEN IN	THE LAYOUT	DRAWII	NG)

### 2.5 | AERIAL VIEW OF M/S SATYA POWER AND ISPAT LTD.



Satya Power And Ispat Ltd.

Director

### CHAPTER - 3 ADDRESS, LOCATION AND PLANT LAYOUT

### 3.1 | ADDRESS/LOCATION OF THE FACTORY

SPIL is situated at village Gatauri in the block Bilha of District Bilaspur, about 9 Kms. from Bilaspur town of Chhattisgarh. Bilaspur town is located on Bombay Howrah Railway line and village Gatauri is situated on Bilaspur-Ambikapur National Highway NH130.

The site is located in Industrial Area, away from populated area. Presently, unit has around 5.09 acres of available land for setting up of this unit.

### 3.1.1 | FACTORY / OFFICE ADDRESS

### SATYA POWER AND ISPAT LTD.

Village: Gatauri, Block: Bilha

Distt: BILASPUR (CHHATTISGARH) Mobile: 8982020000 Phone: 07752 231737

Email: spipl@hotmail.com

### 3.1.2 | REGISTERED OFFICE ADDRESS

#### M/S SATYA POWER AND ISPAT LTD..

1st Floor, V. R. Plaza, Shrikant Verma Road Square, Link Road, Bilaspur

(Chhattisgarh) 495001

Phone: 07752-231737, Mobile: 8982020000

Email id: spipl@hotmail.com

### 3.2 | PLANT LAYOUT

The overall plant layout with fire fighting and emergency rescue facilities is shown in the attached plant layout.

#### 3.3 | MAIN PLANT

The plant is sub-divided into two divisions:

- (1) Sponge Iron Division (3X100TPD)
- (2) Coal Washery Division (1X200TPH)

### 3.3.1 | RAW MATERIAL HANDLING YARD/SHED

Iron Ore/Pallet, crushed in sizes at mines is transported at the plant and fed to Raw Material Plant, Iron Ore/Pallet is fed into ground hopper and passed through different vibrating feeders and vibrating screens through belt conveyor. It is then stocked in lump ore bin situated at Raw Material bin building from where it is used as a feed

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material for Rotary Kiln. Coal transported from mines is passed through vibrating screen and coal crusher for crushing it in required size which is passed on vibrating screen for screening in fine and lump coal for different purpose. Dolomite is added to the kiln feed in order to control the sulphur content of the sponge iron. It has to be fed in a small size in order to ensure adequate distribution and reaction surface. Same process is adopted for all the 3lines of manufacturing (3X100TPD). Number of workers ordinarily engaged/employed in this section are 15-20 Nos.

### 3.3.2 | SPONGE IRON PLANT

The sponge iron plant has been designed and manufactured, erected and commissioned by M/s LURGI, GMBH-GERMANY. In the SL/RN process the reduction is conducted in a refractory lined rotary kiln.

The raw material viz., iron ore, coal and dolomite are fed in the kiln. The rotary kiln of 2.8M diameter and 53M length has been installed for reduction of Iron ore to high-grade sponge iron. Coal is injected through the injection pipe from the discharge end of the kiln. The kiln at a slope of 1.5% with the horizontal and rotation of the kiln facilitates the material to move along the kiln length and then continuously discharge after processing to supply heat for the process air is blown into kiln through the central burner (08Nos air pipes). As the charge moves through kiln, it is heated by the gases, which flow in to opposite direction to the charge.

Temperature inside the refractory lined kiln is maintained from 850°C to 1050°C temperature, from the kiln inlet to outlet by burning coal with the aid of air. Air blower axially into the kiln and on the discharge end of the kiln, and on the discharge end of the kiln, at the beginning, light diesel oil is used to achieve the desired temperature and the fine coal dust is injected from the discharge end. The temperature at which reduction process is carried out is basically determined by the reactivity of the coal to be used.

The chemical reaction, which takes place in the kiln, is as under:

$Fe_2 O_3 + C$	FeO + CC
	(Endothermic)
$CO_2 + \frac{1}{2} O$	CO (Exothermic)
Fe O + C	Fe + CO

The result of reduction is expressed by the degree of Metallization, which is the relationship between the contents of metallic and total iron contained in the sponge iron. Expression would be given as follows:

Metallization degree 100% = % Fe Melt / % Fe Total

The metallization degree of the SL/RN product may reach up to 95-96%.

The kiln discharge material at about 1050°C temperature goes into rotary cooler and is cooled by indirect cooling water up to 70-80°C temperature.

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The cooled cooler discharge material consisting of sponge Iron and ash is separated in product separation unit to get sponge iron and ash. A major quantity of the sponge iron is sold in the market and is utilized as basic raw material for induction furnaces to produce steel through casting process.

The waste gases coming out of kiln are burnt in After Burning Chamber (ABC) to eliminate Carbon Monoxide and other toxic gases as a pollution control measure after removal of dust in the gas in bag filters. These gases are discharged to the atmosphere via chimney of 55M height.

### 3.3.3 | PRODUCT SEPARATION AND HANDLING SYSTEM

Discharged material from rotary cooler is fed to the weigh hopper. From this hopper, material is withdrawn by belt conveyor and continuously weighed. During normal operation, the cooler discharge is transferred to product separation building through belt conveyor.

The cooler discharge 0-50 mm is screened in double deck screen. Oversize material of 20-50 mm is discharged directly to the product conveyor. Fraction 4-20mm is fed to Magnetic Separator -1 and fraction 0-4 mm to Magnetic separator-2. Material of 4-20 mm size is fed into Magnetic Separator where magnetic and non-magnetic materials are separated. Magnetic material of size 4-20mm are fed to the product conveyor and stored in silos.

Fraction material 0-4 mm coming from screen is fed to the Magnetic Separator where it is separated in magnetic and non-magnetic parts. Magnetic material of size 4-20 mm are fed to the belt conveyor, weighed on weigh feeder and transferred in DRI fines load out bin having capacity of 41MT. Non-magnetic material coming from the magnetic separator are collected on belt conveyor and transferred into the 160MT non-magnetic dust bin. Nos. of worker ordinarily engaged in this section are 10-12Nos.

### 3.3.4 | FINISHED PRODUCT STORE

Sponge iron thus manufactured will be allowed to cool down and then is are taken out and shifted to DRI stores yard and again allowed to cool down. No further sieving and sizing is required, this segregated stored sponge iron is ready for dispatch to the clients as per their order. Number of worker ordinarily engaged in this section is 6-8 Nos.

All working area, sections, etc. of these sub-divisions shall be well connected to each other through walk-ways & passages. The main road from entrance gate approaches all around the plant. In case of emergency if arises, at any location, the people working in that location can easily rush to the entrance gate without any obstacle. Emergency assembly points and exit routes are adequately described and marked in Layout Plan.



### 3.3.5 | STORES (RAW MATERIAL AND SPARES)

M.S. sections, pipes, and other steel materials will be transferred from raw material division which is purchased/imported from market or other industries and fed to different sections manually or by means of mobile crane as per the requirement. These raw materials shall be used to perform various processes and also for the maintenance of shed and equipments. Few of the materials/spares will be kept under pucca stores building, whereas many other items to be stored in open yard/sheds for ease of operation. Number of workers ordinarily engaged in this section will be 6-8 Nos.

### 3.3.6 | COAL BENEFICIATION PLANT

Raw coal through a reciprocating feeder and a conveyor, the coal feeds 250mm size receives at a hopper by truck to a roll crusher for crushing to (-)50 mm sizes. Crushed coal discharges onto a belt conveyor to transport it to a surge bunker, where from another belt conveyor reclaims through a reciprocating feeder and feed the barrel washer at a rated capacity. The feed coal along with the media, which generates from coal fines present in the raw coal, passes down the launder to the rotating barrel washer. The sinks or rejects moves up the barrel and discharge on a fixed screen for dewatering.

The floats of the barren travel with the media towards the other end of the barrel pass through a rotating screen attached to it for separating out (-)13mm fractions and (+)13mm discharge into a ring granulator for crushing down to (-)20mm sizes. Crushed products discharge on a vibrating screen for separation of (-)13mm to (-)20mm clean products (-)13mm size screened product along with the products from the conical screen collect in the 1" stage cyclone feed tank and rewash in 3 sets of specially designed horizontal cyclones in two stages, where it is first dewatered in vibrating screen and then discharged on a clean hopper through a conveyor.

Underflow of Cyclones, which are rejects, join with the barrel rejects prior to the dewatering screen and discharge on a reject hopper through a conveyor.

Effluents of (-)0.5 mm, which bled out from the plan, are collected in a set of slurry ponds for recovery of water. There are two numbers of ponds initially slurry is collected in pond No.1 and once filled, fines settled down and clear water flow over to a sump, from where it is pumped back to the circuit. When pond No.1 completely filled with fines, slurry diverted to pond No.2 and the settled fines in pond No.1 is reclaimed to make it empty and thereby ready for intake during the next cycle. The process is repeated for the next cycle. Number of workers ordinarily engaged in this section will be 20-25 Nos.

#### 3.3.7 | EFFLUENT TREATMENT PLANT

The hot gases which are coming out from rotary kiln are allowed to pass through After Burning Chamber (ABC) where its inert heat is utilized to produce steam by WHRSG and then to wet scrubber. The purpose of using wet scrubber is to cool the

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hot gases as well as suppress solid coming out from rotary kiln. The water mixed with solids is then allowed to go into sedimentation tanks from where it is pumped into thickener. In the thickener this sedimentation water is separated out. The cleaned water is reused into cooling system. The thickener discharged which is slightly low pH in nature is brought into the tank where lime is added and this liquid gets neutralized. This neutralized effluent is then taken into a series of settling tank where the solid gets separated. The solids are removed at intervals from the settling tanks and then is sold out to CPCB authorized recyclers in the Chhattisgarh. Number of workers ordinarily engaged in this section will be 2-3 Nos.

### 3.4 | ADMINISTRATIVE BUILDING, OFFICES & REST ROOM

This area is free from any danger from hazardous process as employees will be working within the closed vicinity of building. They shall not be engaged in any manufacturing process. However Emergency Control Centre (ECC) is identified in this building. No. of worker ordinarily engaged/employed for administration will be 6-8Nos.

### 3.5 | HAZARDOUS INDUSTRIES LOCATED IN NEARBY VICINITY

There are some more industries located in the nearby vicinity of SPIL unit, who are engaged in CI casting, MS casting, sponge iron manufacturing, rolling, fabrication and allied jobs. Some of these industries are having hazardous processes as per product requirement. List of such industries are given below with contact details:

S.No.	NAME OF UNIT	CONTACT NUMBER
1.	Arpa Fuels Pvt Ltd. (A coal crushing	Village : Gatouri, Distt Bilaspur
	unit),	Mr Vinod Mittal 98261 66631, 9893304426
2.	M/s. Sudha Agro Oil & Chemical Ind.	Village Mohtarai, Ratanpur Road, Distt:
	Ltd., (Biomass Power Plant)	Bilaspur (Cell: 9826807270)
3.	M/s Welcome Distilleries Pvt Ltd.,	Village: Chherkabandha, Block: Kota, Distt Bilaspur (CG) Mobile: 9617775407, 9617775415 Email: skmishra_12@rediffmail.com
4.	Delhi MSW Solutions Ltd. Village : Gatouri, Distt Bilaspur	
5.	South Eastern Coalfields Ltd.	Seepat Road, BILASPUR (CG) (Phone: 07752 246379 to 246399)

#### 3.6 | NEARBY POPULATION

There is no other hazardous chemicals/material, except as listed in Chapter 7 (Clause 7.2), proposed to be stored or manufactured in the plant. Further any highly inflammable material will not be stacked in the plant beyond threshold limits. The range of physical propagation of stored materials is limited up to 0.2 Kms from the factory site. Thus there is no risk and danger to the local people, residing in this area and in nearby villages due to the plant activity

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specially in case of undue release of gaseous discharge or explosion during plant operation. From the past history of operation of same or similar nature of industries, it can be established that potential of pollution of nearby vicinity due to plant activity is almost negligible. However an emergency preparedness plan is adequately available to mitigate any such incidence if occurs due to any reason beyond expectations. Details of villages surrounding the factory are as follows:

### 3.6.1 | CIVIL POPULATION AROUND 5.00 Km. OF SPIL

SL.NO	VILLAGE NAME & DISTANCE FROM FACTORY (APPROX)	POPULATION AS PER 2011 CENSUS
1,	GATOURI (0.5 KM)	2014
2,	NAWGAWA (4 KMS)	704
3.	KACHHAR (4 KMS)	2415
4.	AMTARA (4.5 KMS)	814
5.,	SENDRI (5 KMS)	4805
6.	RAMTALA (5 KMS)	2682
7.	SEMARTAL (2.5 KMS)	3770

### 3.7 | AMENITIES AVAILABLE NEARBY SPIL

Amenities like school, college, market etc. are located within a vicinity of 1Km, i.e. in Gatauri and Koni villages. Nearest Petrol Pump is situated about 4 Kms away from the unit. Koni is a business hub and Country Club hotel is situated in Koni suburb which is 3Kms apart from the site. This is an amusement club also. Nearest bus stop is Sendri which is 2.5Kms and nearest Railway Station is Bilaspur (situated in Mumbai-Howrah main line where all Passenger trains halt) which is at a distance of 10Kms from the unit. Police Station is situated in Village: Koni which is about 2.5Kms apart from the facility. Places of worship are at a distance of 0.8Km to 1Km from the factory situated at Gatauri village.

S.No.	Name of the amenity	Distance from the plant
1.	Petrol Pump	4.0 Km
2.	Market/Local bazaar Gatauri	0.5 Kms
3	Medical facility : CIMS Hospital	08 Kms
4.	Police Station Koni	2.5Kms
5.	5. School/College –Sendri/Koni 1.5Kms/2.5K	
6.	Railway Station SECR, Bilaspur	10Kms
7:	Nearest Bus Stop – Sendri	1.5Kms

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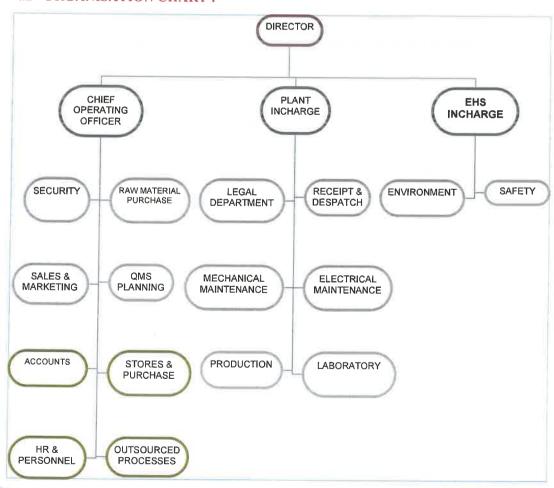
Director

# CHAPTER 4 ORGANISATIONAL SET-UP AND KEY PERSONNEL OF M/S SATYA POWER AND ISPAT LTD.

### 4.1 | NAME OF KEY PERSONNEL

S.No.	Designation	Name
1.0	Occupier & Director	Shri Shikhar Agrawal
2.	Plant Manager & GM	Shri Tuntun Sharma
3	HR & Admin Manager	
4.	Safety/Fire Officer	Shri Rahul Bhadra 91091 34308
5.	OHC Incharge	

### 4.2 ORGANISATION CHART:



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### CHAPTER 5 MANUFACTURING PROCESS OF SPONGE IRON & COAL BENEFICATION

### 5.1 | MANUFACTURING PROCESS OF SPONGE IRON

Sponge iron making is a process in which iron pellets (typically 5mm-18mm size) is tumbled with a 'select' grade of iron-coking coal and a little dolomite inside an inclined rotary kiln and control combusted in the presence of air for about 12 hours before the products are air cooled, magnetically separated, screened size wise in finished product bunkers prior to despatch.

The process entails a direct reduction of the iron pellet (i.e. removal of oxygen from the pellet) in solid state to metalize it at a 'critical' temperature to make this possible. Sponge iron is a metallic product produced through direct reduction of iron ore in the solid state. It is a substitute for scrap and is mainly used in making steel through the secondary route. The quality of sponge iron is primarily ascertained by the percentage of metallization (removal of oxygen), which is the ratio of metallic iron to the total iron present in the product.

Sponge iron manufacturing process is highly sensitive to raw material characteristics. Therefore, it is essential to examine the chemical and physical characteristics of raw materials, both individually and in combination. The basic raw materials for the production of sponge iron are iron pellet, non-coking coal and dolomite. Sizing of the raw materials also play vital role in sponge iron manufacturing process. The required size of iron ore, MPS (Mean particle size), its physical properties like T.I., A.I. & chemical properties like Fe (T), LOI, gangue content are important parameters which adds economy to such a manufacturing process.

### 5.1.1 | PROCESS DESCRIPTION

### 5.1.1.1 | SUMMARY

A long slightly inclined (2.5%) to the horizontal slowly rotating kiln is employed to carry out the reduction. The charges are fed from that end which is at a higher level, it travels under gravity aided by the rotating motion through several heating zones & the reduced charge comes out from the other end of the kiln. This is a solid phase and gaseous reaction; and no liquid phase occurs inside the kiln.

### 5.1.1.2 | REDUCTION OF IRON ORE IN ROTARY KILN

For the direct reduction of iron ore, the main furnace used is rotary kiln. The rotary kiln is the refractory lined cylindrical vessel on which blowers are mounted & the air pipes, to provide combustion air to the inside of the kiln. During light-up, there is a start-up burner at the kiln discharge end which is oil fired to heat up the rotary kiln to ignite the injected coal from outlet of the kiln. When the desired temperature is reached, iron pellet, coal & dolomite are fed from kiln feed end and also coal is injected from kiln discharge end.

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The start-up burner which uses oil for initial heat up is withdrawn after getting the ignition temperature of the injected coal. Now, iron pellet is fed from inlet of the kiln. Since the kiln has a downward slope of 2.5% from the feed end side to discharge end side, its rotation causes the iron pellet & coal to mix and travel through the system. The rotational speed of the kiln is adjustable as per the feed rate & percentage of metallization.

Major factors that affect the DRI process is the percentage of inclination (of rotary kiln), rotational speed, the length of the kiln, time the material is exposed to the reducing agent CO and temperatures obtained. Primarily, Kiln has three functions:

- It acts as a heat exchanger
- It is a vessel for chemical reaction
- It is conveyor of solids
- Degree of metallization indicated the degree of reduction to iron oxide to iron metallic. Better will the heat transfer, efficient will be the metallization process.

### 5.1.1.3 | CHEMICAL REACTION

The following reaction takes place inside the kiln.

C+O<sub>2</sub>=CO<sub>2</sub>; CO<sub>2</sub>+C=2CO;

The above reaction is known as bound ward reaction which is reversible.

 $\begin{aligned} & \text{Fe}_2\text{O}_3 + \text{CO} &= \text{Fe}_3\text{O}_4 + \text{CO}_2; \\ & \text{Fe}_3\text{O}_4 + \text{CO} &= \text{FeO} + \text{CO}_2; \\ & \text{FeO} &+ \text{CO} &= \text{Fe (Metallic)} + \text{CO}_2; \end{aligned}$ 

However the reduction from oxide to metal does not occurs in one step, but by a gradual removal of oxygen giving rise to various intermediate oxides the reduction chain may be expressed as follows:

2 Fe<sub>2</sub>O<sub>3</sub> ----- 2 Fe<sub>3</sub>O<sub>4</sub> ---- 6 Fe Hematite Magnetite Wustite Iron

The degree of reduction between each stage is as follows: 11% 22% 67%

The by-product of above reaction is carbon-di-oxide  $(CO_2)$ . This  $CO_2$  reacts with carbon from coal to produce CO.

 $CO_2 + C = 2 CO.$ 

The above reaction is known as bound ward reaction which is reversible.

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### 5.1.1.4 | PROCESS FLOW

Manufacturing process is coal based DRI production process, which employs a rotary kiln as the main reactor wherein the process of reduction of the iron oxide is carried out with coal as reductant. Refractory lining of about 150-200 mm thickness is given inside the kiln to protect the shell. The kiln has a general slope of 2.5 - 3% down towards the discharge end. There are air blowers mounted on the kiln shell having dampers to provide required air for combustion at different heating zones.

Sized iron pellet and coal in required proportion are fed in to the kiln with the help of the weigh feeders at the feed end. Due to the rotational motion of the kiln and due to the slope provided, the charge moves forward to the discharge end. Thermocouples are mounted on the kiln to measure and control the temperature of the different heating zones. Fine coal is also injected through the discharge end of the kiln with the help of the coal injector machines & lobe compressor, to meet the additional carbon and volatile matter requirement during the reaction.

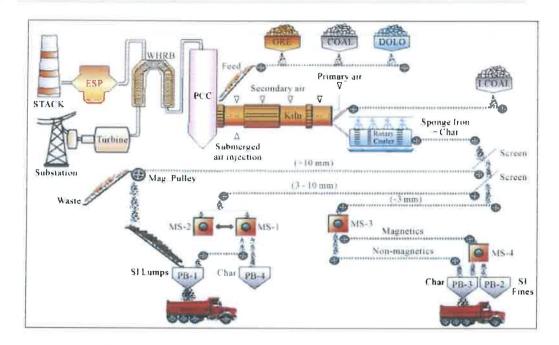
Kiln discharge material which is a mixture of sponge iron and char (mixture of unreduced iron, uncalcinated limestone, gangue and semi-burnt coal) is taken to a rotary cooler. Water is sprayed on the cooler shell to indirectly cool the kiln discharge mix to about 120°C. The cooler also has a slope of about 2.5%. The cooler discharge falls onto a hopper and taken through conveyors for screening of fines and coarse materials. After separating the -3 mm and +3 mm sizes in the product screen, the cooler discharge mix is subjected to magnetic separation where sponge iron is separated from char. Sponge iron and char of coarse and fine sizes are stored in separate silos or hoppers.

The reducing gases generated from the combustion of the coal, flow counter current to the direction followed by the solids and emerge from the feed end. The kiln is maintained at a positive pressure of about +5 mm water column. The flue gases then passes through the gravitational Dust Settling Chamber (DSC) and pass on to the After Burner Chamber (ABC) located right above the DSC. In the ABC, the toxic CO is converted to non-toxic CO<sub>2</sub>. Therefore, in ABC the off-gas laden with combustible matter is burnt. On the top of the ABC, there is an emergency cap to maintain the kiln pressure by letting out the accumulated gases.

In DRI plants, Electrostatic Precipitator is used for dust trapping. In this system, the flue gas, at about 900°C - 950°C, is taken to a Gas Conditioning Tower (GCT) where quenching water is added to cool the gas to about 150°C. The cooled gas then travels to the Electrostatic Precipitator (ESP). Dust is trapped in the ESP and the flue gas is let out using chimney.

SPIL intend to install Waste Heat Recovery Boiler (WHRB) after the ABC, to utilise the waste heat content of the flue gas. The WHRB generates steam at high pressure and use it to run turbines and produce electricity. This improves the plant overall efficiency due to conversion of useful heat value of flue gases for steam generation process.

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### 5.1.1.5 | RAW MATERIALS REQUIRED

Main raw materials for manufacturing of sponge iron are non-coking coal (bituminous coal with moderate GCV, iron pellet and dolomite.

### A | COAL

Important factors determining coal quality are:

- Chemical properties such as fixed carbon, ash content, volatile matter, etc.
- Physical properties viz. reactivity and ash fusion temperature.

Unit is located near Bilaspur town. Headquarters of South Eastern Coalfields Ltd. (SECL) is also located in Bilaspur. Bilaspur is surrounded with lots of coal mines including Korba, Kusmunda, Gevra, Raigarh, Dhanpuri, Kotma, Anuppur, Manendragarh areas which are coal rich area and are under the direct administration of SECL. These coal mines are quite approachable from the said plant, and are situated within a radius of 70Kms to 250Kms having all weather road connectivity throughout the year. Organization has already obtained a coal linkage for the supply of 3200MT/month of indigenous bituminous coal, of G10/G11/G12 grade, from Coal India Ltd. to meet the current requirement. Enhancing this coal linkage quantity for expansion project can conveniently be obtained as per CIL coal linkage policy. SPIL also buys approximately 3000MT/month of imported coking coal from the open market to meet the blending requirement depending upon the price viability. This availability of coal makes the project viable.

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## **B** | IRON PELLET

It is proposed to use Iron Pellet (in lieu of iron ore) in the DRI plant. Advantages of using pellet in DRI Kiln are:

- Sponge Iron Kiln can produce more than 35-40% than its rated capacity with the use of pellet as raw material without any change in the design.
- With the high, uniform mechanical strength and high abrasive strength of the pellet resulting in more yield, the production of sponge iron can be increased.
- Specific consumption of coal/MT of DRI will come down.
- Campaign life will increase due to less accretion.
- As there is less accretion and less fused lump formation, the refractory repairing cost will reduce.
- Metallization is better compared to lump ore.
- There is very little generation of fines in the finished product as against production with lump ore.
- There is less generation of solid waste.
- Maintenance cost will come down, as there will be no need for crushing and screening of iron ore lumps.
- Due to minimum handling of pellet, ground losses are low as compared to iron ore.
- As productivity will improve, cost of production of DRI will come down.
- Due to use of pellets, the fugitive emission is lower.
- Due to lower dust emissions, fugitive emissions etc. there is less stress on environment.

## **TABLE 7 | PROPERTIES OF IRON PELLETS**

S.No.	Chemical Analysis (On Dry Basis)	Unit	Value	Tolerance
1.	Fe	%	65	Minimum
2.	FeO	%	0.3	Maximum
3	SiO2 + Al2O3	%	5	Maximum
4.	CaO	%	0.03	± 0.01
5.	MgO	%	0.06	± 0.01
6.	Basicity	%	0.05	Maximum
7.	Phosphorus	%	0.05	Maximum
Physical 1	Properties			***
8.	Bulk Density	t/Cum	2.2	± 0.2
9.	Tumbler Index	%	93	Minimum
10.	Abrasion Index	%	3	Min ± 0.5%

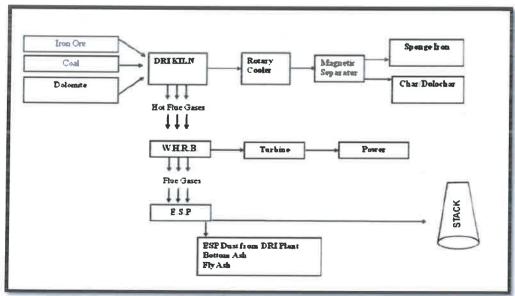
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11.	Cold Crushing Strength (Average)	Kg/P	250	Minimum
Size Ana	llysis			
12.	8-16mm		94	Minimum
13.	-5mm	%	2	Maximum
14.	+16mm	%	4	Maximum
Metallur	gical Properties			
15.	Porosity	%	18 Minimur	
16.	Reducibility % 62 M		Minimum	

As the company is already working since more than 16 years in the same manufacturing vertical, a reliable vendor base has already been developed by them including renowned and capable suppliers in the state of Chhattisgarh region to get supply of required quantity of iron pellet. This availability of iron pellets makes the project viable.

## C | DOLOMITE

Dolomite acts in the process as a desulphuriser, removing sulphur from the feed mix during the reduction process. It is mixed in small proportion along with other raw materials before charging into the kiln. Dolomite is available in abundant quantity in the local market. **Dolomite is used here as sulphur scavenger—it doesn't have any role in the main stoichiometric reaction.** Dolomite typically contains MgO (20%), CaO (28%) and chemical soluble (7%) which gets converted into sulphides (CaS and MgS). The size of dolomite is 2 - 8 mm hence no crushing is required.



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## 5.1.1.6 | RAW MATERIAL CONSUMPTION

The specific raw material consumption (average basis) of iron ore is 1.6MT/MT of DRI, Coal is 1.2MT/MT DRI and Dolomite is 0.05MT/MT of DRI.

Sponge iron produced by the process will be the high grade which contains 80% Fe, 12% FeO and 8% gangue material. After separation of sponge iron in the magnetic screen/pulley, the remains are collected as char. Char has good amount of fixed carbon (25% - 30%) and moderate GCV (2500 - 2600 Kcal/Kg). Out of the total kiln discharge, 15% to 20% is the char generation. This dolochar is proposed to be used as low grade fuel in proposed FBC boiler for generation of 6MW electricity, which will reduce the GCV losses due to recycling.

## 5.2 | MATERIAL BALANCE FOR PRODN OF 1MT OF SPONGE IRON

Input raw material	Quantity (Ton)	Total Quantity (TPA)	Output from Kiln	Quantity (Ton)	Total Quantity (TPA)
Iron Pellet	1.52	136800	Sponge Iron	1.00	90000
Indian Coal	1.12	100800	Char & Dolochar	0.30	27000
Imported Coal	0.48	43200			
Dolomite	0.05	4500	Dust from settling chamber	0.15	13500
			ESP Dust	0.13	11700
			Carbon & oxides losses to atmosphere	1.59	143100
	3.17	285300		3.17	285300

## 5.3 | COAL BENEFICATION PROCESS (COAL WASHERY)

In India, coal is the cheapest source of energy, which is found in abundance. But its quality is very poor compared to the coal being imported from China & Australia. Also there is wide variance in the quality of coal obtained from different mines. In some cases, the ash content is as high as 45-50% also. Coal beneficiation is the process for cleaning & reducing ash content in the coal, thus improving the quality of coal.

Raw coal up to 250 mm is fed through a ground hopper. The coal will move by a slow moving belt conveyor to a rotary breaker. Along the slow moving belt, semi-skilled workers will be deployed to manually pick stones & shales. The residual contaminants will get segregated by the rotary breaker which operates on the principle that coal being lighter will break and get segregated by centrifugal force of the rotary breaker and pass through the screen inside the breaker. Hard stone & shale will not break under same speed and centrifugal force and hence will be discharged through

the reject chute of the breaker. The final product will be of 0-8 mm and 8-50 mm size. Rejects will be of 0-100 mm size.

The properties which are used in coal cleaning are; specific gravity, shape and size of the particles, friction, resilience, surface tension etc. Cleaning process generally depends upon differences in density between clean coal and its impurities. They suitably remove the free dirt but not the inherent dirt. The extent of removal of free dirt on the amenability of a coal to improvement in quality is more commonly known as the "washability" of coal and is more commonly indicated by the "float and sink" analysis of coal. These washability investigations are conducted before average proposal for installation of a coal washery is considered.

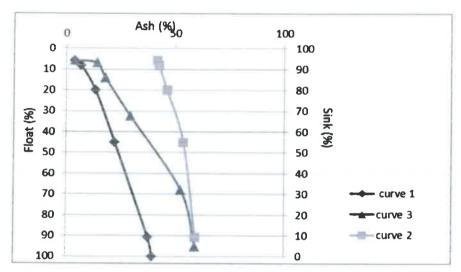


Fig. 3.3 Washability Curve (Mishra, 2009)

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## CHAPTER 6 TECHNICAL DETAILS OF THE ORGANIZATION

## 6.1 | PLANT AND MACHINERY

Globally, the natural gas is a preferred reductant for producing sponge iron. In India, however, coal based-based rotary kiln processes are more popular because of restricted and localized availability of natural gas. Unit envisages on using noncoking coal available from local mines of SECL, which is available throughout the year. The same can either by transported through road or through rail conveniently from the mines to plant site. Equipments installed by the organization is based on use of coal which will be burnt in rotary kiln for further chemical conversion into sponge iron.

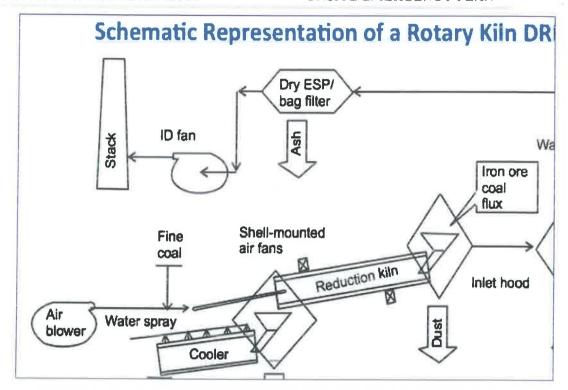
## 6.1.1 | EQUIPMENTS INSTALLED FOR DRI MANUFACTURING

Sponge iron production has significantly increased over the years due to GoI's flexible policy of steel making. Available module size of coal based DRI plants are in the range of 50TPD (15000TPA), 100TPD (30000TPA), 300/350TPD (100000/120000) and 500TPD (150000TPA).

Installed capacity of DRI plant is 100TPD each (30000TPA) and 3Nos. of such DRI plants already commissioned having a total installed capacity of 90000TPA. The major components of SI production plant are:

- Raw Material Handling including Kiln Feed
- Vibratory feeder for coal & iron pellet
- Double deck vibrating screen for coal & iron pellet
- Coal crusher impactor type
- Bucket elevator for coal & feed
- Conveyor including belt Weigh Feeders for iron pellet/feed coal/coarse coal /fine coal/dolomite
- Magnetic Separator
- Rotary Kiln, shell, kiln tyres, support rollers & shaft, kiln girth gear
- Shell air fan, centrifugal type, CB Fan, ABC fan
- Process and plant support systems electrical accessories, panels
- Pollution control equipments

Key factors to consider when investing an equipment, is optimum productivity with least consumption of raw materials (coal, iron pellet & dolomite) and less generation of wastes or rejects. It has been ensured by the promoters that all of process equipment is sturdy enough to withstand the wear and tear in the long term. Investing in high-quality equipment was a wise decision because the equipment will have a longer service life and shall not need replacement in the short term.



The basic process entailing the manufacture of Sponge Iron is very simple. It is primarily associated with the removal of the oxygen associated with the Iron as an oxide in its ore form. There are two well-established processes for achieving this, which are:

- a) Reformed Natural Gas Process
- b) Coal Based Rotary kiln Process

The Coal Based Rotary kiln process is more commercially viable and currently in use in the majority of the Sponge Iron Plants in India. This Process is well understood and the technology well-grounded and available almost as a homegrown technology now.

This process has essentially been designed to carry out reduction using solid reductions like non-metallurgical Coal. A long, slightly inclined, slowly rotating kiln is employed to carry out the reduction. The charge is fed the higher level and it travels under gravity, aided by rotating motion through several heating zones.

The reduce charge comes out from the other end of the kiln and passes through a continuous cooling cooler without coming in contact with atmospheric air. The reduced and cooler product is screened and the oversized are subjected to magnetic separation to obtain clean, and sized Sponge Iron while the non-magnetic oversized as well as undersized are recalculated through the charge.

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In a country like India, which does not possess adequate natural gas and abundant non-coking coal bed, the Rotary kiln process is the obvious choice for producing Sponge Iron from their own iron ore.

Sized iron ore and non-coking coal along with Dolomite/ Lime stone are fed continuously to the charged end (INLET) of Rotary kiln inclined at 2.5%; coal is also injected through pipe at the kiln outlet. Due to the inclination and rotation of the kiln, the charged material moves along the length of kiln where it is discharged continuously after processing. To supply hear for the process, air is blown into the kiln through the central burner and air pipes mounted on the kiln shell. As the charged moves along the length of the kiln, it is heated by the gases which flow in opposite direction to the charge.

The first section, approximately half of the kiln, is called pre –heating zone where Iron Ore Coal, Dolomite/ Lime Stone are heated to reaction temp. (900-1050Deg.C). The second half of kiln is called reduction zone where major amount of oxygen contained in iron ore is removed, leaving metallic iron (Fe). De-sulphurization in the rotary kiln is effected by Dolomite / Lime Stone.

The reduced iron-sponge iron from Rotary kiln is charged into a rotary cooler .The heat will be dissipated indirectly by water spraying on the outside of cooler shell .The material gets cooled to around 100 Degree Centigrade. The product and by — product coming out of coolers screened and fed into rotary drum type magnetic separators where magnetic (sponge iron /umps and fines) and non magnetic (char/un burnt coal) are separated . This is based on SL/RN process which originates from to independent process viz. SL and RN process.

The waste gas materials are leaving from the rotary kiln in the counter current direction at a temperature of 850-950°C pass through a dust settling chamber where the heavier particles settle down and these particles are continually removed by the wet scraper system The waste gases then pass to the After Burning Chamber (ABC) where the combustibles like carbon, soot particles are burnt out. The gases that come out of ABC are cooled in an evaporation cooler to around 180-250°C, and then led to ESP (electro static precipitator), ID (Induced Draught) fan and chimney.

FEED:

**IRON ORE** 

5 mm - 15/18 mm

COAL

3 mm - 12/15 mm

LIMESTONE/ DOLOMITE :

1mm – 6mm

**INJECTION:** 

COAL – COARSE

3mm - 8mm

COAL - FINES

0mm - 3mm

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## 6.1.1.1 | ELECTRIC HOISTS

There are 2Nos of Electric Hoists each of lifting & carrying capacity of 10MT used for lifting & installation of kiln equipments during shutdown/breakdown maintenance of equipments.

## 6.1.1.2 | AIR COMPRESSORS

It is required to supply compressed air to machines operated pneumatically and also for cleaning out risers and runners of moulds. Screw type air compressors of suitable capacity is installed in the unit for supply of compressed air.

## 6.1.1.3 | COOLING TOWER

During the process of DRI making, cooled water will be circulated through kiln which get heated during the process and subsequently cooled in gas cooling tower. Location of GCT marked in the layout drawing appended later with this report.

### 6.1.1.4 | SUB STATION

Connected power load from Chhattisgarh State Power Distribution Co.Ltd. for electricity supply to the factory is 1400KVA (600KVA for coal washery and 800KVA for DRI plant). A sub-station is situated within factory premises bounded by barbed wire fence as per specification.

## 6.1.1.5 | WATER HYDRANT POINT AND FIRE EXTINGUISHER

To meet the fire hazard if occur, water hydrant point and fire extinguishers are provided all round the factory shed and building as marked in the layout drawing enclosed with this plan. Fire hydrants will have a minimum pressure of 7.5Kg/cm2 to produce a water jet of 75M.

## 6.1.1.6 | DIESEL GENERATING SET

To meet the requirement of electricity at the time of Emergency or during power failure in the factory to run Emergency light/Pumps etc, a D.G. set of 500KVA capacity is commissioned to generate and supply standby power. The same has been installed under shed area with walls open from sides. Necessary permission to install and operate DG set has been obtained from statutory authorities.

## 6.1.1.7 | LABORATORY EQUIPMENTS

In the laboratory, some chemical/physical properties of manufactured sponge iron will be tested for parameters such as percentage of carbon & hardness including density. Hence the equipments and analytical chemicals for performing these tests has been kept in the laboratory.

## 6.1.1.8 | CHIMNEY & I.D. FAN WITH POLLUTION EQUIPMENT

To achieve the required temperature in furnace, furnace oil gas is being used for firing, hence generated smoke is emitted in the atmosphere by means of I.D. Fan and 55M high Chimney after allowing settlement of dust particle in pollution control equipments.

## 6.1.1.9 | WORKSHOP

A well equipped workshop consisting of two nos. lathe m/cs, one no. shaping m/c, two nos. grinders, one no. hoist of 5MT capacity & eight nos. rectifier type welding machines are commissioned for the maintenance of equipments to manufacture small pares for day to day maintenance.

## 6.1.2 | EQUIPMENTS REQUIRED FOR COAL BENEFICIATION

Following equipments have been installed in our unit for coal beneficiation (1X200TPH capacity) having annual coal washing capacity of 1440000MT:

SL.NO.	PARTICULARS	NOS.	POWER REQ.
1	RECEIVING SECTION		
	FEED HOOPER & FEEDER	1	4.4KW
	LUMP COAL CONVEYOR(BC-1)	1	45KW
	ROTARY BREAKER	1	75KW
	FEED CONVEYOR TO VIBRATING SCREEN-I (BC-2)	1	45KW
2	WASHERY SECTION		
	DESLIMING SCREEN(VS-I)	1	60KW
	DESLIMING SCREEN(VS-II)	1	60KW
	CLEAN COAL CONVEYOR (BC-3)	1	30KW
	CLEAN COAL CONVEYER (BC-4)	1	30KW
	REJECT CONVEYER(BC-5)	1	15KW
3.	LIGHTING & WORKSHOP		10KW
4.	WEIGH BRIDGE(100 MT CAPACITY)	2	10KW
5.	BOREWELL	2	15KW
	TOTAL		399.4KW say 400KW

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## 6.2 | RAW MATERIALS & THEIR QUANTITY

To meet the normal production, main raw materials and their tentative quantity proposed to be stored inside factory premises within warehouse or open/shed area are as follows:-

S.NO.	RAW MATERIAL	QUANTITY	MEANS OF STORAGE			
SPONGE	IRON DIVISION					
1	Iron Ore	5000 - 7000MT	In open area over hard soil with bed liner over soil			
2	Coal	10000-13000MT	In open area over hard soil with bed liner over soil			
3	Imported Coke	7000-8000MT	In open area over hard soil with bed liner over soil			
3	Dolomite	300 - 500MT	In open area over hard soil with bed liner over soil			
COAL WASHERY DIVISION						
1	Coal (for washing) received from clients	10000-13000MT	In open area over hard soil with bed liner over soil			

## 6.3 | FINISHED PRODUCTS & THEIR QUANTITY

S. NO.	FINISHED PRODUCT	QUANTITY	STORAGE PLACE & MEANS
1	Sponge Iron	1500 – 2000 MT	Under covered shed area
2	Washed coal	2000-3000MT	Under covered shed area

## NOTE

Storage Area of materials where there is a possibility of spillage/leakage, shall be provided with dyke wall so that leaked material will not mix up/spill over a large area and can be reused/ disposed off easily. Hazardous chemicals like Diesel will be stored in Tank/Drum provided with dyke wall.

## 6.4 | WATER AVAILABILITY

Total water requirement after expansion will be 2361m³/day which is being met from river Arpa or through dugwells bored inside the plant premises. There will be no effluent generation from sponge iron kilns, induction furnace & coal washery as closed circuit cooling water system will be adopted in the expansion. Effluent (163KLD) from power plant such as boiler blow down, DM plant regeneration waste



water will be neutralized in a neutralization tank. After neutralization, these streams will be mixed with cooling tower blow down in a Central Monitoring Basin (CMB). Treated water from CMB/ETP will be utilized for dust suppression, ash conditioning and for greenbelt development as secondary water. Zero discharge concept is proposed to be adopted for the project under evaluation. Sanitary wastewater (2KLD) will be treated in septic tank followed by soak pit. Based on calculations, it is verified that available water requirement is sufficient to meet water demand of the project.

## 6.5 | ELECTRICAL POWER AVAILABILITY

A dedicated transformer of 950kVA rating (33KV/433V), Maker's Serial No. 33/243 Make: Process & Engineering Transformer has been installed within the unit premises for uninterrupted supply of electricity to the unit. Total connected load is 600KVA for coal washery and 800KVA for DRI unit. Conductors stretched upto the electrical control room. Electricity connection was available at the time of inspection and equipments were found under charged condition.

It was further verified that Service No. 1021820 has been obtained for existing Coal washery whereas 1001182 obtained for DRI unit. A sub-station is erected by Chhattisgarh Power Distribution Co.Ltd., beside plant premises to meet electrical power requirement of the unit. Overhead service line 3phase, 33KV/440V stretched upto the plant with Meter Sl. Nos. S1001150 (Coal washery) and CSE18550/PTR (DRI plant). Total active power requirement of the unit is about 900kVA (active), sanction for 857HP is available which comes out to be 900KVA taking into consideration a power factor of 0.80.

Verification of current electrical power consumption has been done and is appended in this report. SPIL has later planned to set-up 12MW captive power generation through WHR and FBC boilers which will meet total proposed electricity requirement of 11.5MW. Electricity from grid shall be required to meet the auxiliary power consumption of power plants itself. Hence the unit will be self-sufficient with captive power generation as proposed and discussed in detail.

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## CHAPTER 7

## HAZARDS CONSIDERATION IN OPERATION/PROCESS/STORAGE, MSDS & RISK ANALYSIS

## 7.1 | HAZARD CONSIDERATION

## 7.1.1 | MAJOR HAZARD POTENTIAL ASSESSMENT

Major disasters or emergencies occurs usually due to anyone or combination of the following reasons:

- (a) Slow isolated fires
- (b) Fast spreading fires
- (c) Explosions
- (d) Bursting of pipe lines/vessels
- (e) Uncontrolled release of toxic/corrosive/flammable liquids.
- (f) Uncontrolled release of toxic/flammable gases/dust

Depending upon the nature, scale, speed and impact on environment, each of these may lead to an emergency situation. The potential hazard of various sections in the factory is identified and tabulated in HIRA register.

## 7.1.2 FIRE HAZARD

- (a) In induction furnace section due to heat and temperature.
- (b) In oil storage section
- (c) Cables on galleries and on trays in all plant sections
- (d) In raw material and spares storage section
- (e) Due to static electricity/lightning.

### 7.1.3. EXPLOSION HAZARD

- (a) In diesel storage tank & pipelines due to direct fire
- (b) Transformers (oil cooled)
- (c) Compressor cylinder and compressed air tank

## 7.1.4 BURSTING OF PIPE LINES

- (a) Compressed air pipes due to high pressure
- (b) Water pipes due to high pressure
- (c) Diesel carrying pipe due to high pressure

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## 7.1.5 RELEASE OF GASES / DUSTS

- (a) Gases from furnace.
- (b) From the chemical storage area.
- (c) At the time of pumping/filling.
- (d) At the time of unloading.

## 7.2 | HAZARDOUS MATERIALS STORED IN FACTORY

S.NO.	NAME OF THE HAZARDOUS CHEMICAL	IS MSDS ENCLOSED	MAX. QTY. OF STORAGE IN TON/KL	PLACE OF STORAGE	MODE OF STORAGE (VIZ. BAGS, U/G OR ABOVE GROUND STORAGE)	ARRANGEMENTS MADE TO CONTROL DE-CONTAINMENT LIKE DYKE ETC.	OTHER SAFETY ARRANGEMENTS	AREA LIKELY TO BE AFFECTED	LIST OF PPE'S USED DURING HANDLING OF THESE CHEMICALS
1,	DIESE L	Y E S	14,3 kilo liters	A dedicated diesel storage yard, away from transformer & electrical installation; is there near DG set with 18" of sand bedding. Drums & cans stored above ground. Temp of the diesel shed maintained below its flash point 32°C.	Stored in 205Kg sealed drums under shed over an 18" sand bedding to capture any spillage of diesel during storage. Loose diesel drums are isolated and its cap is duly tightened to arrest any leakage. Spill kit provided. Diesel drums are stored away from transformer or other electrical installation.	A secondary containment (steel tray) is used while transferring the diesel from 205Ltr drums to 10Ltrs cans through hand operated pumps and any spilled diesel is then collected and refilled in the master drums. Spill kit provided in diesel shed. Sand bedding captures any undue spillage, oil cladded sand is then replaced on regular basis.	MSDS of diesel displayed at diesel shed. Spill kit provided to capture any leakage or spillage of diesel. Foam type FE installed. DG set bends and pipes are tested with soap soln to identify any leakages.	Workers in diesel shed area may be affected due to spillage. In case of fire, plant area may be affected.	Diesel Spill Kits, Soap solution, eyewash shower, breathing apparatus, Foam type Fire extinguish ers
2	O <sub>2</sub> OXYG EN (CYLIN DER) FOR GAS CUTTI NG	Y E S	7m³ cylinder s X 10Nos	It is a halocarbon filled within the air-conditioning equipments itself during commissioning by the AC manufacturer or their service personnel.	Filled in O2 cylinders supplied by O2 refilling station (agency) itself for gas cutting purpose. A dedicated area for storage of filled and empty oxygen cylinders identified. Cylinders are stored in vertically upright condition with top cap. Used with flame arrestors. Stored away from welding or hot working zone. It is ensured that cylinders are not being roll down during loading/unloading.	O <sub>2</sub> cylinders may explode due to high temperature. Flame arrestors are used during welding work. Welding operation is being suspended in case of any leakage detection. FIFO is following at cylinder storage yard.	In case of any leakage detection, welding operation is suspended. Realtime sensors for gas leak detection installed at various places (specially near bends and joints). MSDS displayed, Area is ventilated during use.	Confined at Shop Floor area. Explosio n may cause the body injury to the welders in the shop floor area.	Canister type gas mask, welding face shields, hand gloves

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3.	LPG FOR GENER AL USE	Y E S	14.5Kg Each X 3Nos, in stock for general use	It is a petro- carbon product filled within the LPG cylinders and is being used with flame arrestors. Any loose stock of LPG is not being used.	Filled in LPG cylinders supplied by LPG refilling station (agency) itself for general purpose application. A dedicated area for storage of filled and empty LPG cylinders available. Cylinders are stored in vertically upright condition with knob under closed condition, when not in use. Used with flame arrestors. Stored away from welding or hot working zone. It is ensured that cylinders are not being roll down during loading/unloading.	LPG gas decompose when exposed to high temperature with the formation of toxic & irritating compounds. Leakage detector is used in the area where cylinders are being installed. Gas burners are being closed immediately, in case of any leakage detection or smell of gas. Area of application is effectively ventilated.	Gas burners are being closed immediately, in case of any leakage detection. MSDS displayed. Area is ventilated during its use. Wet linen is available to cover the cylinder during backfire.	Confine d at Shop Floor area It may result in the suffocati on to the workers in the shop floor area	Gas leakage detector, Canister type gas mask, eye washers, Foam type FE, fire buckets, wet linen
4.	LPG FOR COMM ERCIA L USE	Y E S	19Kg Each X 20Nos (for commer cial use welding and cutting)	It is a petro- carbon product filled within the LPG cylinders and is being used with flame arrestors. Any loose stock of LPG is not being used.	Filled in LPG cylinders supplied by LPG refilling station (agency) itself for welding and cutting purpose. A dedicated area for storage of filled and empty LPG cylinders are stored in vertically upright condition with knob under closed condition, when not in use. Used with flame arrestors. Stored away from welding or hot working zone. It is ensured that cylinders are not being roll down during loading/unloading.	LPG gas decompose when exposed to high temperature with the formation of toxic & irritating compounds. Leakage detector is used in the area where cylinders are being installed. Flame arrestors are effectively installed during welding. It will be operated, in case of any leakage detection or smell of gas. Shop floor area is effectively ventilated.	Flame arrestors are installed with each cylinder Welding and cutting operations are stopped in case of any leakage detection. MSDS displayed. Area is ventilated during its use,	Confine d at Shop Floor area It may result in the suffocati on to the workers in the shop floor area	Gas leakage detector, Canister type gas mask, eye washers, Foam type FE, fire buckets,

NOTE: Location of hazardous chemicals storage area are marked with 'Red colour' in the layout drawing.

## 7.3 | CONSEQUENCE OF MAJOR HAZARDS FROM STORAGE & HANDLING:

## 7.3.1 | High Speed Diesel

1. Physical and chemical characteristics of High Speed Diesel

### Fire

- a. Flammable
- b. Vapour / air mixtures may be explosive
- c. Foam and liquid-tight protective clothing with breathing apparatus is used.

### Health

d. Irritating to eyes, respiratory system and skin

- e. Chemical pneumonitis may arise following aspiration of vomitus (secondary to ingestion) or inhalation of aerosol (or aspiration of liquid) during manual siphoning
- f. Prolonged skin exposure may cause skin irritation & possible carcinogen
- g. Water spray showers are installed at workplace for quick/forced washing
- 2. Flammable liquid (flash point between 23°C and 61°C) or flammable liquid or solid in the molten state with a flash point above 61°C, heated to a temperature equal to or above its flash point, or self-heating liquid.
- 3. Diesel exhaust is made up of two types of materials: gases and particulates (soot). Carbon monoxide, nitrogen oxides, phenol, formaldehyde and PAHs (*polynuclear aromatic hydrocarbons*) are some gases in diesel exhaust. These may cause breathing problem. Diesel exhaust causes irritation of the respiratory tract, which may result in changes in lung function usually reversible.
- 4. A dedicated diesel storage yard, away from transformer or electrical installation; has been created near DG set with 18" of sand bedding on it. Drums and cans stored above ground. Temperature of the diesel shed maintained below its flash point 32°C.
- 5. Stored in 205Kg sealed drums under shed over an 18" sand bedding to capture any spillage of diesel during storage. Loose diesel drums are isolated and its cap is duly tightened to arrest any leakage. Spill kit provided. Diesel drums are stored away from transformer or other electrical installation.
- 6. A secondary containment (steel tray) is used while transferring the diesel from 205Ltr drums to 10Ltrs cans through hand operated pumps. Any spilled diesel is then collected and refilled in the master drums. Adequate number of spill kits provided in diesel shed. Sand bedding captures any undue spillage, oil cladded sand is then replaced on regular basis.
- 7. MSDS of diesel displayed at diesel shed and workers are being trained about counteracting during any accidental leakage/spillage of diesel during tool box training. Spill kit provided to capture any leakage or spillage of diesel. Foam type fire extinguishers installed. DG set bends and pipes are tested with soap solution to identify any leakages.
- 8. Eyewash shower and breathing apparatus made available with the process owner. A quick response system is there in place to inform the safety officer in case of any major leakage of diesel or any fire occurrence.
- 9. Hence compliance to Factories Act 1948, Section 2 (cb) and Rule 107 Sec-87 is fully made within our workplace regarding storage and handling of Diesel.

## 7.3.2 | OXYGEN GAS (USED FOR METAL CUTTING OPERATION)

- 1. 7m³ cylinders X 10Nos. is used to store and use oxygen gas for cutting purpose. Leakage of this cutting gas or collapse of storage cylinder itself is not harmful, but rapid leakages may result in explosion affecting workers working in the nearby areas.
- 2. Oxygen gas can cause bursting of storage vessels (where it is compressed and in liquid state) and they react violently and explodes on contact with other material and emit out broken metal parts which can spread in work area.

- 3. It is a cutting gas filled within the cylinders, duly hydraulically tested, at authorized gas filling stations under controlled condition. Record of such hydraulic tests is captured and preserved by the organization. "First In First Out" (FIFO) is followed while storing and drawing the oxygen gas cylinders in the prescribed stock yard.
- 4. Leakage detector is used while using it. Flame arrestors are installed in the cylinder top. Gas cutting operation is being stopped immediately, in case of any oxygen leakage is detected.
- 5. Realtime sensors for gas leak detection installed at various places (specially near bends and joints). MSDS of Oxygen gas displayed which is also appended with this manual in annexures. Area is completely ventilated during operation and forced draught (mancooler/exhaust fan) is used, when required.
- 6. Hence compliance to Factories Act 1948, Section 2 (cb) and Rule 107 Sec-87 is fully made within our workplace regarding storage and handling of Oxygen Gas.

## 7.3.3 | LPG GAS FOR GENERAL PURPOSE

- 1. 14.5Kgs cylinders (maximum 3Nos.at a time) of LPG is kept in stock for general use for cooking and water heating purpose.
- 2. It is a petro-carbon product filled within the LPG cylinders and is being used with flame arrestors. Any loose stock of 14.5Kgs LPG is not maintained inside the plant or is not being used for any commercial application.
- 3. LPG gas is filled in air tight cylinders supplied by LPG refilling station (agency) itself for general purpose application. A dedicated area for storage of filled and empty LPG cylinders available.
- 4. Cylinders are stored in vertically upright condition with knob under closed condition, when not in use. Used with flame arrestors. They are stored away from welding or hot working zone. It is ensured that cylinders are not being roll down during loading/unloading.
- 5. LPG gas decompose when exposed to high temperature with the formation of toxic & irritating compounds. Leakage detector is used in the area where cylinders are being installed. Gas burners are being closed immediately, in case of any leakage detection or smell of gas. Area of application is effectively ventilated.
- 6. Gas burners are being closed immediately, in case of any leakage detection. MSDS displayed. Area is ventilated during its use. Wet linen is available to cover the cylinder during backfire.
- 7. Gas leakage detector, Canister type gas mask, eye washers, Foam type FE, fire buckets are used while handling, loading or unloading of general purpose LPG.
- 8. Hence compliance to Factories Act 1948, Section 2 (cb) and Rule 107 Sec-87 is fully made within our workplace regarding storage and handling of LPG gas cylinders (14.5Kg cylinders-general purpose).

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## 7.3.4 | LPG GAS FOR COMMERCIAL PURPOSE

- 1. 19Kg Each X 20Nos. LPG Commercial grade cylinders are used for commercial use including welding and cutting operation in fabrication shop.
- 2. It is a petro-carbon product filled within the commercial grade LPG cylinders (19Kg storage capacity) and is invariably used with flame arrestors. Any loose stock of commercial grade LPG is not maintained inside the plant or is not being used for any other application then its intended purpose.
- 3. LPG gas is filled in air tight cylinders supplied by LPG refilling station (agency) itself for general purpose application. A dedicated area for storage of filled and empty LPG cylinders available.
- 4. Filled in LPG cylinders are supplied by LPG refilling station (agency) itself for welding and cutting purpose. Cylinders are stored in vertically upright condition with knob under closed condition, when not in use. Always used with flame arrestors and Stored away from welding or hot working zone. It is ensured that cylinders are not being roll down during loading/unloading.
- 5. LPG gas decompose when exposed to high temperature with the formation of toxic & irritating compounds. Leakage detector is used in the area where cylinders are being installed. Welding torches are being stopped immediately, in case of any leakage detection or smell of gas. Area of application is effectively ventilated.
- 6. MSDS of the commercial grade LPG gas is displayed at shop floor.
- 7. Gas leakage detector, Canister type gas mask, eye washers, Foam type FE, fire buckets are used while handling, loading or unloading of commercial LPG.
- 8. Hence compliance to Factories Act 1948, Section 2 (cb) and Rule 107, Sec-87 is fully made within our workplace regarding storage and handling of LPG gas cylinders (19.0Kg cylinders-commercial).

## 7.4 | CONSEQUENCE OF MAJOR HAZARDS FROM PROCESSING:

- (I) Local hazard at the place due to spillage, spread to nearby area. Spillage cleaning, housekeeping & 5S practice is in place.
- (II) Fumes of Oil/Gas spread and densely contained in working area.
- (III) Fumes generated during metal cutting activity. Proper fume mask to the welders shall be provided at the time of performing such activities.

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## 7.5 | PHYSICAL RANGE OF PROPAGATION WHEN LEAKED

Storage (Hazardous as per 7.3)	Processing/ (Hazardous as per 7.4)
I. Limited to factory premises	I. Limited to factory premises
II. Can spread up to 200M or outside the factory premises	II. Can spread in the processing section/shed upto 200M within the factory premises.
II. Can spread up to 200M or outside the factory premises	II. Can spread in the processing section/shed upto 200M within the factory premises.

## 7.6 | MATERIAL SAFETY DATA SHEET OF HAZARDOUS GOODS

Adequate and effective mitigation measures have been taken to avoid any risk related to hazardous chemicals stored in the organization to meet process requirements. Following are the process chemicals which are hazardous in nature and stored within the plant:

- LPG for commercial use & general use
- DIESEL (C<sub>10</sub>H<sub>23</sub>)
- Oxygen

Material Safety Data Sheet (MSDS) for each of these chemicals are attached in the annexure for hand-on reference. These MSDS have also been displayed appropriately at work site in local language with Do's and Dont's, which is strictly followed while handling these chemicals for the understanding of workers and they will be trained about the same during external/internal training sessions.

## 7.7 | DESCRIPTION OF HAZARDOUS OPERATION/PROCESS/AREA/MATERIAL

Working with molten metal has always been a dangerous job. Present day high efficiency induction furnaces have improved working conditions by making melt shops cooler, cleaner and generally less hostile work places since the heat, noise and fumes associated with the combustion furnaces are not there. However these furnaces have not eliminated the dangers inherent in working close to liquid metal.

Reasons for most of the accidents in the melt shops with induction furnaces are:

- a. The introduction of wet or damp metal in the melt, causing a water/metal explosion,
- Lack of operator skills during temperature monitoring, sampling or the additions of ferro-alloys causing metal splash,
- c. Dropping of large pieces of charge material into the molten bath, causing metal
- Improper attention to charging causing bridging action, d.

- e. Failure to stand behind safety lines, causing a trapping situation,
- f. Coming into contact with electrical conductors, overriding safety interlock switches or coming into contact with incompletely discharged capacitors, causing electric shocks or electrocution, and
- g. Lack of proper training of operating crew.

In our organization we have a system developed and is in place to identify such hazards and associated risks. A documented HIRA procedure alongwith HIRA chart is available for such identification duly quantified and graded as significant and non-significant risks. Adequate training shall be provided to all level of employees to understand such process risks and accordingly action plan to mitigate them during process performance have been documented as Operational Control Procedures. Hazard Identification and Risk Assessment register is duly approved by the Plant Manager which will be circulated to various process leaders as well as shop floor level employees for better understanding of risks and associated mitigation procedures. A glimpse of this register is reproduced here as an integral part of this Onsite Emergency Plan.

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7.7.1 | HIRA REGISTER: DESCRIPTION OF HAZARDOUS OPERATION/PROCESS/AREA/MATERIALS
Process specific Hazard Identification and Risk Assessment (HIRA) is documented and implemented within the organization which is likely to arise due to hazardous operation/processes in such areas of operation. These are further described as below:

OPERATION CONTROL MEASURES IDENTIFIED/IMPLEMENTED		a) MSDS of diesel displayed at diesel shed. Spill kit provided to capture any leakage or spillage of diesel. Foam type FE installed. DG set bends and pipes are tested with soap solution to identify any leakages. b) Diesel Spill Kit, soap solution (for soap bubble test of joints and pipelines, eyewash shower, self-contained breathing apparatus, and foam type fire extinguishers provided to cater to the emergency situation due to leakage or self-ignition of high speed diesel. c) MSDS of the diesel displayed (in english and in hindi languages) and training imparted to all level of employees working in the shop floor area or near DG set.
PRECAUTIONARY MEASURES IMPLEMENTED/EXISTING		a) A dedicated diesel storage yard, away from transformer or electrical installation; has been created near DG set with 18" of sand bedding on it. Drums and cans stored above ground. b) Temperature of the diesel storage shed maintained below its flash point 32°C. c) Stored in MS cylinder tank & kept away from any type of fire causing things. d) A secondary containment (steel tray) is used while transferring the diesel from 205Ltr drums to 10Ltrs cans through hand operated pumps and any spilled diesel is then collected and refilled in the master drums. Spill kit provided in diesel shed. Sand bedding captures any undue spillage, oil cladded sand is then replaced on regular basis.
POTENTIAL HAZARDS	SECTION	Flammable liquid (flash point between 23°C and 61°C) or flammable liquid or solid in the molten state with a flash point above 61°C, heated to a temperature equal to or above its flash point, or self-heating liquid.  Hence fire hazard may be possible if comes in direct contact with fire.
DESCRIPTION OF OPERATION/ PROCESS EQUIPMENT/AREAS	IN INDUCTION FURNACE SECTION	Storage, handling, loading, unloading & pumping of High Speed Diesel to Diesel Generating set
No.	Z	01.



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<ul> <li>a) In case of leakage, it will be controlled with the help of valves and the leaking joint shall be repaired by replacing the gaskets.</li> <li>b) Freon gas cylinders must be kept vertically upright during filling operation of gas in the air-conditioning system. Surplus gas is being taken back by the service agency personnel.</li> <li>c) Canister type gas mask, eye washers, face masks, hand gloves is made available and is used while handling and storage of Freon R134A gas.</li> <li>d) All machines are compact and whole process is done under consistent watch of supervisors and by adopting all safety precaution and measures.</li> </ul>	a) Gas leakage detector, Canister type gas mask, eye washers, Foam type FE, fire buckets provided to counter any emergency situation due to LPG leakage. b) MSDS of the LPG displayed. c) Area is adequately ventilated during its use. d) Wet linen is available to cover the cylinder during backfire. e) Gas burners are being closed immediately, in case of any leakage detection.
<ul> <li>All the pipe joints and flanges are periodically examined through soap solution method to identify any leakages.</li> <li>To maintain the ambient temperature below flash point of the R134A, the force draught (exhaust fan or mancooler is used) specially during filling of the R134A in AC system.</li> <li>NR Valves installed within the system are being closed immediately, in case of any leakage detection. Realtime sensors for gas leak detection installed at various places (specially near bends and joints). MSDS displayed. Area is ventilated during refilling.</li> </ul>	14.5 Kg cylinders are received with top cap tightened and sealed. A dedicated area for storage of filled and empty LPG cylinders is created. Cylinders are stored in vertically upright condition with knob under closed condition, when not in use. They are used with flame arrestors. Use of such cylinders and their storage area is away from welding or hot working zone. It is ensured that cylinders are not being roll down during loading/unloading.
Leakage of the gaseous oxygen O <sub>2</sub> or collapse/rupture of storage vessels can give rise to explosion due to high pressure inside the cylinder. out toxic fumes and gases affecting workers working in the nearby areas. Freon gas decompose when exposed to high temperature with the formation of toxic & irritating compounds viz. hydrofluoric acid, CO and carbonyl fluoride.	LPG for general purpose use is received in 14.5Kg cylinders and maximum 3Nos. of cylinders are kept in stock for general use. It is a petro-carbon product filled within the LPG cylinders. Any loose stock of LPG is not kept within the plant.
Storage and handling of oxygen O <sub>2</sub> for cutting and welding operation	Storage and handling of LPG for general purpose use.
005	03,

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a) Gas leakage detector, Canister type gas mask, eye washers, Foam type FE, fire buckets provided to counter any emergency situation due to LPG leakage. b) MSDS of the LPG displayed. c) Area is adequately ventilated during its use. d) Wet linen is available to cover the cylinder during backfire. e) Gas burners are being closed immediately, in case of any leakage detection.	An isolated raw material movement area has been created in the RMH section having a minimum interference with worker's activity in that area. Fallen materials are removed on daily basis.	An isolated hot metal movement area has been created in the kiln section having a minimum interference with worker's activity in that area. Manholes are operated at a safe distance under the supervision of competent staff.	Drowned person is immediately given first-aid treatment. Required number of first aid boxes kept near main office. If any injury is caused then after giving first aid to person/ worker referred for further treatment to doctor/hospital.
19.0 Kg cylinders are received with top cap tightened and sealed. A dedicated area for storage of filled and empty LPG cylinders is identified in shop floor area. Cylinders are stored in vertically upright condition with knob under closed condition, when not in use. They are used with flame arrestors. Use of such cylinders and their storage area is near welding area for easy accessibility. It is ensured that cylinders are not being roll down during loading/ unloading.	Adequate training on material handling given to all the workers (including contract workers). No person is allowed to remain present in the magnetic conveyor's operation area.	Safe distance is being maintained between the rotary kiln and workers. Workers are provided with good quality safety shoes, goggles and aprons to withstand any undue splash of hot metal.	Water tank is duly retained with wall & covered.  Workers are not permitted to go near the storage water tank. Only maintenance staff are allowed to visit that area with proper work permit.
LPG for commercial use is received in 19.0Kg cylinders from the refilling station. Maximum 20Nos. of cylinders are kept in stock for welding and cutting purpose. It is a petro-carbon product filled within the LPG cylinders. Any other type of stock of LPG is not kept within the plant.	Fall of material hazard and twisting of transfer trolley/magnetic conveyor causing fall of metal scrap	Splash of processed hot metal causing severe burn injury to workers.	Drowning of a man possible during maintenance of tanks Burn injury due to returning hot water is possible
Storage and handling of LPG for commercial use.	Raw material delivery upto charging section	Induction Furnace Area	Water Storage Tanks
	05.	.90	97.

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Instructions are displayed for communicating to the workmen at workplace (in local language) with Do's and Don'ts.  MSDS of hazardous chemicals displayed at appropriate places. Chemical spill kits provided in all areas. Rescue kit is available to mitigate any emergency fire situation.	In the event of electric leakage main supply is immediately isolated. Shock Treatment & first aid provided. Earth pit resistance values are tested and recorded periodically. No cut wires or loose shunted wires are used in the factory area. Adequate training against electrical shock is provided to workmen (including contract workers). Metal clad plugs & sockets are installed wherever required.	Cutting off the power supply and proper treatment facility (including first aid facility) in case of electrocution is made available.
<ol> <li>Proper care taken to store/handle hazardous and non-hazardous chemicals at an identified place.</li> <li>Fixed fire fighting equipments like extinguishers, sand bucket etc. are kept available to mitigate fire occurrence due to ignition of chemicals/ spilled chemicals.</li> <li>First aid boxes are kept available at site and First-aid personnel are employed.</li> </ol>	A. Earth leakage Circuit Breaker's (ELCB's) are installed.  B. Shock precaution & treatment chart (in case of electrocution) are displayed.  C. Operators are provided with Insulated shoes and electric resistance hand gloves duly ISI marked.  D. All instruments are properly Earthed.  E. Electrification layout & diagram is displayed.	Shock proof insulated PCC platform constructed inside the switchyard. Earth pit resistance is tested periodically. No vegetation is allowed inside switchyard.
In case of leakage, may cause burns and damage to respiratory system.  In case of flash point occurs due to atmospheric temperature, self ignition may be caused.	Electrical shock hazard possible due to leakage current.	Electrical shock due to leakage current
Laboratory Chemicals storage and handling	Electrical panel control Rooms	Electric shock hazard in transformer and switchyard area during maintenance.
08	*60	10.

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Weak wire rope and chain, shackle is immediately replaced.  SWL marking is checked periodically.  Annual check of the rope and other load bearing equipments is being carried out through Competent Person approved by Industrial Health & Safety Department.  Eye check-up of hoist operator is done periodically and records maintained in Form 21.	a) The crane movement is done only after obtaining the line clearance. b) If any injury is caused then after giving first aid to person/worker refer for further treatment to Doctor/Hospital (if required) c) Shackles and other components of lifting tools and tackles are examined internally as well as externally by competent persons.
A. No movement of unauthenticated persons in hoist operating bay is permitted.  B. Frequent check of the rope and other load bearing equipments/tools is being carried out through Competent Person approved by Industrial Health & Safety Department.  C. Light indication during movement of hoist is provided.  D. Prescribed load only is allowed and SWL's marked in each crane or lifting tools & tackles.  E. Crane operator are required to buzzer an alarm before start of movement.	1. Magnets are placed properly in the chains with appropriate capacity of D-shackle duly tested before lifting and moving across the billet handling area.  2. Process is performed under strict supervision of competent manpower.  3. Fastening & loosing of materials from the crane is done by trained person under the guidance of shift-in-charge  4. Hoist is not moved till clearance is given to operator.
Hoist rope breakage possible.	Serious injury may be caused due to movement of components by hoist if job is not fastened carefully
Electric hoists & other load lifting tools & tackles	Shifting of manufactured MS billets/ingots by hoist
<b>=</b>	12.



13.

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Regular health check-in of employees	carried out to assess any health	deterioration status, if occurs,							
Regular water sprinkling is done on the	transport roads created inside the plant	premises for dust suppression.							
	from lungs & other	health problems due to	fugitive emission	generated during	transportation &	handling, loading	unloading of raw	materials & finished	DRI.
on of fugitive	emission								

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## CHAPTER 8 EMERGENCY FACILITIES AVAILABLE IN CASE OF ANY HAZARD OCCURRENCE

## 8.1 | SHIFT ALARMING SYSTEM

An electric alarm facility is installed within the plant premises of M/s Satya Power and Ispat Ltd. having an audible range of 0.50 Kms. Its switch is kept in security gate from where it is operable by time office operator/security incharge.

Presently the alarm is maintained in general as under:

- 1. At 6.00 AM For end of C shift and beginning of A Shift.
- 2. At 9.00 AM For beginning of General Shift.
- 3. At 10.00 AM For lunch break of A Shift
- 4 At 11.00 AM For end of lunch break of A Shift
- 5. At 1.00 PM For lunch break of general shift
- 6. At 2.00 PM For end of lunch break & end of A shift and beginning of B shift.
- 7. At 6.00 PM For end of General Shift
- 8. At 6.00 PM For Rest break of B Shift
- 9 At 7.00PM For end of break of B Shift
- 10. At 10.00 PM For end of B shift and beginning of C Shift.
- 11. At 2.00 AM For dinner/Rest break of C Shift
- 12. At 3.00 AM For end of dinner break of C Shift

The siren is blown continuously for 15 seconds once only in above cases.

## 8.2 | EMERGENCY ALARM SYSTEM

In case any emergency arises in the plant, the way of blowing the siren shall be as under and blown by either CIC or by Time Office in-charge/Security Officer only after getting permission from CIC/WIC.

S.NO.	NATURE OF EMERGENCY	TYPE OF ALARM
01.	NORMAL FACTORY SIREN	CONTINUOUS BLOW FOR 15 SECONDS (ONCE ONLY)
02.	FIRE EMERGENCY, EXPLOSION AND IN CASE OF LEAKAGE OF GAS/CHEMICAL	BLOW FOR 5 (TEN) SECONDS AND OFF FOR 01 (ONE) SECOND TO BE REPEATED 03 (THREE) TIMES
03.	EMERGENCY CLEAR SIREN	CONTINUOUS BLOW FOR 30 (THIRTY) SECONDS ONCE ONLY

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## 8.3 | EMERGENCY CONTROL CENTER (ECC)

For the efficient implementation of emergency action plan, an **Emergency Control Center** (**ECC**) shall be established in our unit situated in office building located near the entrance of Plant outside the Manager (HR & Admin) chamber in the ground floor. <u>Location of Emergency Control Centre is marked with 'Green colour' in the layout drawing.</u>

The ECC will primarily be managed by the Chief Incident Controller (CIC) in association with WIC, Security Officer, the key personnel and Senior officers of outside agencies called in for assistance. No other personnel is allowed to access the ECC.

The Emergency Control Center is equipped with the following data/information:

- 1. Safety data pertaining to the hazardous materials likely to cause emergency. Procedure of major and special fire fighting, rescue operations, first-aid, artificial respiration system, etc.
- 2. Emergency call-out list of persons deputed for emergency control i.e. key personnel and notified team members, security, police and state authorities.

## 8.3.1 | FACILITIES AVAILABLE AT ECC

The Emergency control Center (ECC) of the organization will be equipped with following facilities all the time:

- 1. Intercoms/PA system
- 2. P & T Phones, cell phones
- 3. Fax facilities
- 4. Layout Plan and Key Plan map
- 5. Important telephone numbers in soft
- 6. Emergency lights
- 7. On-Site Emergency Plan manuals
- 8. First Aid box and its position in different section
- 9. List of Personal Protective Equipment (PPE)
- 10. Position of Fire Fighting Equipments (as shown on Layout plan)

### 8.3.2 | AMBIENT WIND DIRECTION

The wind direction in the Bilaspur area is generally from South West to North East with a maximum wind velocity of 4.6m/sec as per meteorological records available. As coastal area is away from the Bilaspur town, the ambient wind is calm and stern. During extreme summer, due to atmospheric pressure, wind velocity is observed as high. Hand held gas detector will be provided to the stores personnel to verify the hazardous fume/gas leakages from chemical storage area which is adjacent to store room. 1No. of wind sock installed in the unit Saiya Power And Ispat Ltd.

## 8.3.3 | EMERGENCY LIGHTING FACILITY

For lighting the critical zones/area of plant in case of emergency (including during the power cut off), a D.G. set is installed which will always be kept under working condition through which power is available throughout the day and night as per requirement. This subsidiary power will be available for lighting of all sections of the unit and will also be used to run all the emergency equipments such as water pumps for fire extinguishing. Illumination level in all the core and support process area shall be tested as per IS 3646 (Part\_1) 1992 and results verified through IS 6665:1972 by external agency.

## 8.3.4 | FACILITY OF ROLL CALLS/ ATTENDANCE

At the time of entry of workers for the working shifts, the roll calls for attendance will be made at main gate by Time keeper/Supervisor. Computerized punching system or biometric attendance recording system is also installed and made operational. Proper records of number of employees, contract workers and visitors present inside the plant at any moment of time will be maintained in the format as per CG Factory Rules 1962.

Our Security officer, already employed, is well trained to recognize the plant workers. Restricted entry of visitors/outsiders will be made under the concurrence from respective officer with whom such visitors/outsiders intend to meet.

## 8.3.5 | FACILITY TO INFORM RELATIVES OF VICTIM

A system is there in place to communicate the relatives of affected person during emergency situation within short span of time either over mobile phone or by sending the office staff to their residence. [Address of all workers alongwith their nearest relatives contact number shall be recorded adequately & records retained by Manager (HR/Admin) in soft as well as in hard copies duly updated].

## 8.3.6 | FUNCTIONS OF EMERGENCY CONTROL CENTER (ECC)

In case of any emergency situation, it is inevitable to evacuate affected person from inside the factory to a safer place. It is also essential to evacuate non-essential workers to streamline Emergency Action Plan activities and ensuring safety of those people. The evacuation will be affected after getting information from the Works Incident Controller (WIC) soon after emergency arises. On evacuation, all workers, staff and employees other than *Notified Team Member*, shall assemble at designated assembly points for receiving further information.

## 8.4 | ASSEMBLY POINT

Four assembly points are adequately identified and marked for gathering of employees in case of any emergency situation arises. Assembly points marked are in front of product house, coal washery area, near underground water tank outside kiln3 area and outside diesel generator set room/near transfer towers. These points are easily accessible to all

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employees working in hazardous or non-hazardous processes. In case of any emergency, all employees shall be trained through mock drills to move to the nearest available assembly point. Record of such Mock drills shall be maintained by safety officer for future reference.

## 8.4.1 | ALTERNATE ASSEMBLY POINT

In the event of any emergency situation, administrative building and security gates are earmarked as final assembly points of the organization. All employees and work staff assembled at the assembly point shall abide to the information and actions plan made known to them either by CIC or WIC. It has been arranged that the non-essential work staff and employees shall not leave the assembly point unless and until introduced to do so by the competent authority.

## 8.5 | RESPONSIBILITY/DUTIES OF MEMBERS OF OUR ORGANISATION

The responsibility and duty of personnel's of M/s Satya Power and Ispat Ltd. at the time of emergency, are classified as under:

- a) CHIEF INCIDENT CONTROLLER (CIC)
- b) WORKS INCIDENT CONTROLLER (WIC)
- c) KEY PERSONNEL (KP)
- d) ESSENTIAL STAFF/CREW MEMBER AND NON-KEY PERSONNEL

## 8.5.1 | RESPONSIBILITY OF CHIEF INCIDENT CONTROLLER

The overall incharge i.e. Plant Manager is designated as the Chief Incident Controller of the factory.

HR and Admin Manager will take over the charge of Chief Incident Controller in absence of the Plant Manager. The Chief Incident Controller (CIC) shall assume overall responsibility for the factory /storage site and its personnel.

The C.I.C. shall be responsible:

- a) to assess the magnitude of the situation and to decide if the affected worker needs evacuation from the assembly points to an identified safer place.
- b) to exercise direct operational control over the areas other than those affected.
- c) to undertake a continuous review of possible developments and assess in consultation with the WIC/Key personnel as to whether shut-down the plant or any section thereof, and will identify the need for evacuation of personnel.
- d) to liaise with Sr. Officials of Police, Fire Brigade, Medical authorities or nearby industries in Mutual Aid and Factory Inspector etc. in consultation with communication officer over phone or in writing, and provide advice on possible

effects on areas outside the factory premises as well as on adjacent village/residential area, through Manager (HR/Admin) about the emergency.

- e) to look after rehabilitation of affected personnel on discontinuation of emergency.
- f) to issue authorized statements to news media and ensure that evidence is preserved which will be required to be produced before investigation team during departmental enquiry as well as shall be required to be submitted to statutory authorities.

In addition to above, the following actions will also be initiated simultaneously during the emergency period by CIC.

## 8.5.1.1 | DECLARATION OF EMERGENCY

After consulting with the Works Incident Controller (WIC), CIC will declare EMERGENCY in the plant if required.

## 8.5.1.2 | GIVING ALL CLEAR SIGNAL

As after overcoming the emergency arise in plant, after consulting with WIC, he will raise the ALL CLEAR SIGNAL.

## 8.5.1.3 | INFORMATION TO GOVT. DEPARTMENT

CIC/WIC will inform to Factory Inspector and to other government officials about the committed emergency, and will implement the suggestions/instructions received from them to mitigate the emergency situation.

## 8.5.2 | RESPONSIBILITY OF WORKS INCIDENT CONTROLLER

Plant Manager has been designated as the Works Incident Controller (WIC). In the absence of Plant Manager, Manager (HR & Admin) will discharge the duties of WIC of the unit.

The WIC shall immediately rush to the incident site as soon as he come to know about the emergency and shall take overall charge. He shall subsequently inform about the emergency to the Chief Incident Controller.

He will assess the extent of the emergency and decide if major emergency exists and inform the Communication Officer accordingly. Further the Officer in consultation with CIC inform to all outside agencies. He shall be responsible:

- a) to direct all operations to stop within the affected area taking into consideration priorities for safety of personnel, minimum damage to the plant, property and environment and, minimum loss to materials.
- b) to provide advice and information to the Security Officer, Safety Officer and the local fire service.

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- c) to ensure that all non essential workers/staff of the affected areas are evacuated to assembly points and that the affected areas are searched for casualties.
- d) to set-up communication points and establish contact with Emergency Control Center in the event of area of electric supply causing disruption in Public Address System (PAS) and internal telephones.
- e) to report on all significant developments to the Communication Officer, and
- f) to safeguard the evidence of emergency occurrence so as to facilitate any enquiry about the circumstances which caused or escalated the emergency.

It will be the responsibility of WIC to identify the essential staff from Work Task Force and ask them to report at the defined control center so as to ensure their availability. This task is performed through mock drills which will be conducted from time to time by Safety Officer of the unit involving employees, workers and contract workers. Records are maintained of such mock drills.

## 8.5.3 | RESPONSIBILITY OF KEY PERSONNEL

Apart from the Chief Incident Controller and Works Incident Controller, there are other Key Personnels (KP) who are responsible to assist and facilitate required tasks in combating the emergency.

The Key Personnel (KP)/Officer incharge list shall be prepared and circulated within the organization. The list is appended from time to time, as the staff keep on changing. A list of the Key Personnel along with their telephone numbers and their residential address shall be made available to all the workers and employees within the organization.

Wherever and whenever required, the Key Personnel in addition to their job assigned, are bound to assist the Chief Incident Controller and Works Incident Controller in case of any emergency situation.

### 8.5.4 | RESPONSIBILITY OF ESSENTIAL STAFF/CREW MEMBER

To streamline the activities in connection with combating the emergency situation, personnel selected are known as Essential Staff. This include steno/typist, attendants, messengers, drivers, supervisors etc. depending upon the services required by either CIC or WIC or the KP.

## 8.5.5 | RESPONSIBILITY OF NON KEY PERSONAL

At the time of entry of Non-Key Personnel including persons from outside, induction training is proposed to be given to them about structure and safety regulations applicable within the

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organization. Do's and Dont's shall be displayed in hazardous areas with MSDS to communicate such visitors. Requirement of PPE's for visiting to a designated area will be communicated to all such visitors well in advance and they shall use all such safety gears before they enter into respective work areas.

## 8.6 | FIRE FIGHTING FACILITY AVAILABLE IN FACTORY TO FIGHT FIRE

Following fire extinguishers shall be installed in the factory as described in *Section 38* of The Factories Act 1948 in respective locations as indicated against each extinguisher:

Id No	Type of Fire extinguisher	Capacity	Location
FE I	Fire Extinguishers ABC Type	6Kg Capacity	Sub station
FE 2	Fire Extinguishers ABC Type	6Kg Capacity	Main stores
FE 3	Fire Extinguishers BC Type	6Kg Capacity	Kiln-1
FE 4	Fire Extinguishers ABC Type	6Kg Capacity	Kiln-1
FE 5	Fire Extinguishers ABC Type	6Kg Capacity	Kiln-2
FE 6	Fire Extinguishers ABC Type	6Kg Capacity	Kiln-2
FE 7	Fire Extinguishers ABC Type	6Kg Capacity	Kiln-3
FE 8	Fire Extinguishers ABC Type	6Kg Capacity	Kiln-3
FE 9	Fire Extinguishers ABC Type	6Kg Capacity	Diesel Tank
FE 10	Fire Extinguishers BC Type	6Kg Capacity	Diesel Tank
FE 11	Fire Extinguishers ABC Type	6Kg Capacity	Maintenance Main Panel
FE 12	Fire Extinguishers BC Type	6Kg Capacity	DG Set
FE 13	Fire Extinguishers ABC Type	6Kg Capacity	Security Gate
FE 14	Fire Extinguishers ABC Type	6Kg Capacity	Security Gate
FE 15	Fire Extinguishers BC Type	6Kg Capacity	Near Air Receiver
FE 16	Fire Extinguishers CO <sub>2</sub> Type	4.5Kg Capacity	ECC, Admn 1st flr
FE 17	Fire Extinguishers CO <sub>2</sub> Type	4.5Kg Capacity	ECC, Admn 2 <sup>nd</sup> flr
FE 18	Fire Extinguishers CO <sub>2</sub> Type	4.5Kg Capacity	Security Gate

## 8.6.1 | OUTSIDE AGENCIES FOR REQUESTING HELP (FACILITY OF FIRE TENDER AVAILABLE IN NEARBY AREA)

Following are the Fire Brigade Services available on call:

S.No.	Availability of fire tender in nearby vicinity	Contact Number
I.	Fire Brigade Services of Bilaspur Municipal Corporation	07752-222642



## 8.6.2 | INFORMATION REGARDING THE FIRE BRIGADE SERVICE OF BILASPUR MUNICIPAL CORPORATION & OTHERS

S.No.	Description	Contact details		
l <sub>a</sub>	Fire Brigade Services of Bilaspur Municipal Corporation, Fire Officer	07752-222642, email id : commissionerbmcbilaspur@gmail.com		
2,	Nagar Panchayat	Ratanpur, Distt: Bilaspur (CG)		
3.	South Eastern Coalfields Ltd.	Seepat Road, BILASPUR (CG) (Phone : 07752 246379 to 246399)		

The Fire Brigade Service of Bilaspur Municipal Corporation is equipped with all types of fire-fighting equipment to overcome any type of Emergency; whether it may be a fire due to leakage/spillage of diesel, chemicals, or due to any other reason. On call, and after knowing briefly about the type of emergency, they provide the emergency mitigation services onsite.

## 8.7 | HOSPITALISATION FACILITY

If any person/worker gets affected during emergency situation in the factory, he will be immediately provided first-aid from the available facilities inside the factory and then will be taken to company's designated Doctor's dispensary; or nearby CIMS hospital and Apollo hospital where treatment is provided in consultation with medical practitioner. If required, he will be shifted to alternate nursing home for further treatment under advice of medical practitioner.

## 8.7.1 | EMERGENCY HOSPITALIZATION FACILITY

Name of Hospital	Address	Number of Beds	Contact Nos.	Approximate distance from the unit
Primary Health Centre	Koni Distt Bilaspur	10		04 Kms
Chhattisgarh Institute of Medical Science	al Bilaspur 200 07752 22628		07752 226285	13 Kms
Main Hospital	Main Hospital Bilaspur		07752 226285	14 Kms
Primary Health Centre	Raianniir			13 Kms
Apollo Hospital Seepat Road Bilaspur		300	07752 243300	14 Kms
Shriram CareNehru Nagar, CSEBHospitalRoad Bilaspur		100	07752 271111, 213413	7Kms

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Company has kept a vehicle in the factory to meet any potential emergency situation during plant operations. Further, a qualified OHC incharge has been deputed to take care of Occupational health and safety activities of the employees working with the organization and his services are available round the clock. Our Plant Manager, Shift In-charge, Supervisors are well aware about the emergencies, they are living/staying in nearby area and are able to reach site at any moment.

## 8.7.2 | MEDICAL CREW AND FIRST AID TEAM:

Company has appointed a practicing doctor on contract basis and trained persons shall be employed to render the First-aid/ medical assistance to the victim at site. Adequate arrangement is made to carry the injured workman for the further treatment, if required, and referred by doctor/first-aid person to hospital/medical center which is located offsite the Factory.

Duty/action of medical crew is as follows:

- 1) Immediately after the information received as regards accident in the factory, one of the trained first-aider with doctor (if available) rush to the site and provide required first-aid. Subsequently, information is communicated to senior persons of the unit.
- 2) After giving first-aid, ambulance/vehicle is called upon to carry the victim for providing better medical facility, to the medical center/hospital.
- 3) Ambulance/evacuation vehicle/outside medical agency is allowed to go through factory gate without normal checks.
- 4) Rescue of victims/causalities on priority basis.
- 5) Information is taken and further communicated to the senior officials during treatment in hospital/medical center.

Company has provided 4 Nos. First-Aid Boxes at selected points within the factory premises including at OHC and in security office with following medicines -

01. SOFRAMYCIN	02. BETNOVATE - N	03. LOCULA - 10%	04. BURNOL
05. DETTOL	06. MECROERON	07. NEBASULF	08. IODINE
09. BETADINE (Iodin	e Ointment)	10. RELAXYGEL	11.BANDAGE
12. COTTON		13. SCISSORS	

## 8.7.3 | MEDICAL FACILITY AVAILABLE IN GATAURI AND NEARBY AREA:

- a) 10 bedded Primary Health Centre located in Koni village which is about 4 Kms. from the factory.
- b) 200 bedded Chhattisgarh Institute of Medical Science, Bilaspur (CG) is about 13 Kms. from the factory. Phone No.- (07752) 226285

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- c) 100 bedded Main Hospital Bilaspur (CG) which is about 14Kms from the factory, Phone No. (07752) 226285
- d) 5 bedded Primary Health Centre located in Ratanpur town of Bilaspur distt. (CG) is about 13Kms from the factory.
- e) 300 bedded Apollo Hospital, Seepat Road, Bilaspur (CG) which is about 14Kms from the factory, Phone No. (07752) 243300
- f) 100 bedded Shriram Care Hospital, situated in Ameri Road, Nehru Nagar, CSEB Office, Bilaspur (CG) is about 7Kms from the factory, Phone No. 7566111999, 9406111999

## 8.8 | FACILITY OF EMERGENCY RESCUE KIT IN SPIL

Nos. of emergency respirator kits available.	No.of self contained breathing apparatus	No. of Air line respirator	No. of canister respirators	Other PPE's	Neutralization facility provided for neutralizing chemicals
01No.	Nil	Nil	01No.	List of other PPE's are given as under (in sufficient Nos.)	ETP sludge will be neutralized at neutralization chamber and is subsequently sold out to authorized recycler of CPCB.

## 8.8.1 | DETAILS OF PPE's

The following personal protective equipments is required and kept in the unit protect the person from the direct effect of hazardous substances as a proactive protective measure:

### 8.8.1.1 | HAND GLOVES - 100 Pairs

All workers have been strictly instructed to wear leather/asbestos hand gloves during handling hot material and scrap, and ISI marked Rubber Hand Gloves of suitable rating for electrical and other critical applications.

## 8.8.1.2 | GUM BOOTS - 12 pairs

Gum boots has been provided to all persons working on the floor including contract workers.

## 8.8.1.3 | APRON - 10 Nos.

Heat/chemical proof apron has been provided to all workers, who are engaged in the core production processes, to safeguard their body from direct contact of heat/chemicals splashes.

## 8.8.1.4 | GOGGLES -70 pairs

While handling the furnace process/hot steel pieces, workers and staff have been instructed to wear heat resistant safety goggles to safeguard their eyes from hot metal particles.

## 8.8.1.5 | NOSE MASK - 105 Nos.

Nose masks are provided to shop floor workers who are likely to be exposed to fumes and gaseous exhaust, specially in hot rolling area. It is ensured by shop floor supervisor that workers are using the same while performing critical activities and exposed to fume and gaseous exhaust.

## 8.8.1.6 | HELMET - 130 Nos. :

Hard head helmets with HDPE chin strip have been provided to the workers for head protection. As per our organizations safety policy, only ISI marked helmets are purchased by the organization from reputed firms.

## 8.8.1.7 | FLUSH & SHOWERS - 2 Pts.

Flush and showers have been made available in few of the areas where different types and grades of lubricating oil to be handled. If any mishap take place, these can be used for immediate eye wash or face wash of the victim.

## 8.8.1.8 | EMERGENCY SPILL KITS TO STOP OIL LEAKAGE - 08 Nos.

A set of leak stop emergency kit are kept available in oil storage area. Workers and supervisors have been adequately trained for handling the same.

All other required personal protective equipments have been provided for specific jobs viz. cutting, welding, hot metal working etc. Inspection of the PPE's shall be carried out periodically and their serviceability to be ensured by the concerned shift incharge of the section/location.

Any damage/deterioration/defect noticed in any of the above mentioned Personal Protective Equipment (PPE's) shall be highlighted in the section register which is further reviewed by the safety officer and accordingly action is taken to replace/repair for use.

## 8.9 | PROTECTION SYSTEMS

M/s Satya Power and Ispat Ltd., engaged in sponge iron manufacturing and coal beneficiation activities has been carefully designed & protected by sophisticated instrumentation controllers and interlocks duly maintained in order to minimize the risks. It has been ensured that only experienced, qualified and trained personals are being deployed to run the plant in order to control the core processes. Wherever necessary, the employees will be equipped with required personal protective equipments for protection against occupational hazards. Fire fighting equipments like fire extinguishers and sand buckets will be provided at conspicuous points for primary control of fire hazard.

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# 8.10 | MUTUAL AID/CONSULTATION

Mutual aid and consultation under the condition of stress and duress is available from the industries located nearby. All possible measures including consultation, joint meetings and thorough mutual communications will be exercised in order to safeguard the safety of the employee under emergency situation. Following list shows the industries located in the nearby vicinity with whom, SPIL has regular interaction to run joint safety motives.

S.No.	NAME OF UNIT	CONTACT NUMBER
1.	Arpa Fuels Pvt Ltd. (A coal crushing	Village : Gatouri, Distt Bilaspur
	unit),	Mr Vinod Mittal 98261 66631, 9893304426
2,	M/s. Sudha Agro Oil & Chemical Ind.	Village Mohtarai, Ratanpur Road, Distt:
	Ltd., (Biomass Power Plant)	Bilaspur (Cell : 9826807270)
3.	M/s Welcome Distilleries Pvt Ltd.,	Village: Chherkabandha, Block: Kota, Distt Bilaspur (CG) Mobile: 9617775407, 9617775415 Email: skmishra_12@rediffmail.com
4.	Delhi MSW Solutions Ltd.	Village : Gatouri, Distt Bilaspur
5.	South Eastern Coalfields Ltd.	Seepat Road, BILASPUR (CG) (Phone: 07752 246379 to 246399)

# 8.11 | DETAILS OF POLLUTANTS AND CONTAMINANTS PRESENT IN THE WORK ENVIRONMENT

Work Environment Quality within the organizational working area is verified for satisfactory performance. SPIL Management is committed to provide pollution free working atmosphere throughout the factory premises. From time to time, pollution monitoring will be done against various parameters through external agency and certificates will be available thereof. A report of monitoring about the Working Environment Quality is given as under:

Pollutant	Shift PPM	TWA PPM	
SPM	100 ppm	500 ppm	
CO2 & Dust	5 ppm	15 ppm	
СО	200 ppm	500 ppm	
SO2	100 ppm	120 ppm	
NOx	60 ppm	120 ppm	

Organization is in the process of obtaining licenses for Consent to Operate (Air & Water) as per relevant act in compliance to above environmental air/water quality requirements. A system is there in place to check the above parameters through third party atleast once in a year in order to ensure that no adverse air/water quality is resulted due to plant activities.

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# 8.12 | FORMATION OF EMERGENCY TEAM AND THEIR DUTIES

# SRI SHIKHAR AGRAWAL (DIRECTOR & OCCUPIER) (CIC)

**PLANT MANAGER (WIC)** 

FIRE FIGHTING TEAM

OFFICER INCHARGE

**ASSISTANTS** 

**MEMBER OF CREW (1) PARTY** 

**DUTIES** 

- 1. With the help of fire fighting equipments try to control the light fire/leakage
- 2. Inform to operators to shut down the process/ machines
- 3. All the workers working around the affected area are carried away except to the emergency team persons.

RESCUE OPERATION TEAM

OFFICER IN CHARGE

**ASSISTANTS** 

**MEMBER OF CREW (2) PARTY** 

**DUTIES** 

Inform to all concerning officers including fire brigade services on phone regarding the fire/leakage

Keep all the important document/portable machines in the safe place

Control the traffic at main gate of plant & at workplace.

Give first aid to victim, refer him to hospital

Wait and follow the further instructions from officer.

**CARDON TEAM** 

OFFICER INCHARGE

**ASSISTANTS** 

**MEMBER OF CREW (3) PARTY** 

**DUTIES** 

Shut off all switches and cut off power from switch room.

Fulfill the supply of fire fighting equipments Provide the emergency facilities, tea, snacks etc.

Carry and guide the coming fire brigade services to the point of fire/leakage.

Provide logistic for the victim to transfer him to nearest hospital.

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# **8.12.1 EMERGENCY CREWS**

Following team has been notified for deployment in case of any emergency within the organization. The responsibilities of this team are also defined and documented in this report. These teams shall be working in strict adherence to the instructions released by CIC/WIC.

S.No.	EMERGENCY CREW - 1 (FIRE FIGHTING)	CONTACT NO.
1,,	General Manager	91091-34302
2.	Production Manager	91091-34306
3.	HOD (Mechanical)	81200-88441
4.	Head (HR & Admin)	7440444024
5	Safety/Fire officer	91091 34308

S.No.	EMERGENCY CREW - 2 (RESCUE OPERATION)	CONTACT NO.
1,	HOD (Electrical)	91091-34308
2.	HOD (Laboratory)	91091-34309
3.	Stores WB	97551-00969
4.	Incharge (RMHS)	91091-34317
5.	OTHER MEDICAL TEAM CALLED FROM OUTSIDE	

S.No.	EMERGENCY CREW - 3 (CARDON TEAM)	CONTACT NO.
1.	Electrical Supervisor	98275-11102
2.	Mechanical Supervisor	81200-88441
3.	Purchase Manager	91091-34304
4.	Sr. Accountant	91658-93839
5.:	Assistant Accountant	91091-34305
6.	OTHER PERSON AS PER INSTRUCTION OF CIC/WIC.	

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# CHAPTER 9 ACTION PLAN TO MEET EMERGENCY

Organizations core commitment rests on the concept of **SAFETY FIRST**. At SPIL, we have envisaged all safety measures and communicated detailed information to all level of employees. Organization has documented actions necessary to overcome and control any type of emergency situation that may arise in our unit, which are enlisted as under:

# 9.1 | PROCEDURE TO MEET FIRE & OTHER HAZARD

# 9.1.1 | FIRST INFORMATION OF EMERGENCY

As soon as an emergency is noticed by any of the SPIL Staff, he will shout to divert the attention of other people at the place of emergency, and will subsequently inform to the ECC telephonically about it. He will communicate it to the Shift Engineer/incharge immediately. Information will also be given to the Security/Fire Officer. Shift Engineer and Security/Fire Officer shall immediately inform about Emergency to the Chief Incident Controller and the Works Incident Controller. In addition to this, they shall also inform to HR Manager and cardon team so as to intimate to all emergency team members and to other agencies accordingly as per the instruction of CIC/WIC.

# 9.1.2 | DECLARATION OF EMERGENCY

CIC/WIC after mutual consultation and making himself aware about the magnitude of emergency, shall declare Emergency in the plant. He, in turn, will immediately instruct the security personnel to raise the EMERGENCY SIREN.

#### 9.2 | ACTION IN CASE OF LEAKAGE/SPILLAGE OF OIL

Foreman or section incharge/operator will first try to stop the oil leakage with the help of spill kit provided. Proper training will be imparted to all such personnel about this job. He will then neutralize the leaked oil. In the meantime, other members will keep themselves ready to help controlling the situation.

# 9.3 | ACTION TO FIGHT FIRE HAZARD

# 9.3.1 | Emergency actions within 15 minutes of occurrence

- a) Start water sprinkling on the affected equipments
- b) Stop the plant and stop leakage of any chemical/Oil
- c) Inform to the Communication Officer and to CIC/WIC
- d) Shut down electric supply to the entire factory/isolate the affected area
- e) Dilute the escaped chemical if any by spraying water/lime
- f) Fight fire with ABC type dry chemical powder or foam type extinguisher
- g) Escape out workers except those trained for emergency operations

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# 9.3.2 | ACTION IN CASE OF FIRE

The following actions will be followed to avoid fire incidences:

- Any person discovering the fire shall attempt to put off the fire by using the first aid fire-fighting appliances available.
- Simultaneously, he will start shouting FIRE, FIRE, AAG, AAG till assistance arrives,
- He will inform CIC/WIC over phone/intercom/mobile about the fire immediately. CIC/WIC will instruct Security personnel to raise Emergency Alarm.

# 9.3.3 | ACTION BY THE PERSON NEXT ARRIVING AT THE SCENE OF FIRE

Any person hearing the shout FIRE, FIRE, AAG, AAG will immediately rush to the scene of fire and start;

- a) shouting FIRE, FIRE, FIRE/ AAG, AAG, AAG
- b) assist rescue and fire fighting operation by using equipments and extinguishers available nearby and intimate fire wing if not done already.
- c) guide/assist fire fighting personnel.

# 9.3.4 | ACTION BY FIRE FIGHTING TEAM

- a) The fire-fighting team soon after reaching the place of fire shall start rescue and fire fighting work as quickly as possible and keep passages and doors clear for evacuation.
- b) Arrange salvage operation protecting valuable property or covering up of machineries
- c) Keep the area free from the visit of unauthorized personnel.
- d) Complete the fire fighting operation.

# 9.3.5 | ACTION BY PLANT INCHARGE

- a) Immediately on hearing the fire out break, he shall rush to the scene of fire and assume charge of rescue and fire fighting operation. He will ensure that the information is passed to the fire station; he will inform the Key Personnels (KP) about the incidence of fire. He will post a guide to direct the fire personnel to the scene of fire, if not already done.
- b) If required, get the electrical connections isolated from the main switches for power cut-off to speed up the rescue operation.
- c) Guide fire personnel about any special hazard and ensure successful fire fighting.

# 9.3.6 | ACTION BY INCHARGE FIRE FIGHTING

The senior-most officer present at the scene of fire, irrespective of the fact that he is directly controlling the section or not; shall assume control, assess the criticality of the situation and

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take action to extinguish or control the fire as expediously as possible. He shall consult his superiors for further action.

# 9.3.7 | ACTION BY OTHERS

- a) Other section incharge(s), on hearing the fire alarm /emergency alarm, not involving in the process of fire mitigation shall immediately relieve all the fire fighting trained personnel (under his charge) to proceed to the scene of fire to render assistance as required.
- b) All other work shall normally go uninterrupted.

# 9.4 | EVACUATION

In a major emergency, it will certainly be necessary to evacuate personnel from the affected areas as quickly as possible. As a precautionary measure to further evacuate non-essential workers from the affected areas, the employees and workers should be directed to reach predetermined assembly point. This is to ensure that employees don't have to approach the affected area/point.

# 9.4.1 | INFORMATION TO GOVT. DEPARTMENT

CIC/WIC will inform to all Govt. departments as well as to Factory Inspector about the committed emergency, and try to gather and implement the suggestion from them.

# 9.5 | POST EMERGENCY OPERATION

After the fire is extinguished from entire place/areas, the team in-charge will inform to the CIC/WIC about the situation so that the ALL CLEAR SIGNAL will be sounded through the electric siren in consultation with Chief Incident Controller and Work Incident Controller.

#### 9.5.1 | ALL CLEAR SIGNAL

After such emergency is under complete control of the crew, works incident controller will communicate to Chief Incident Controller about it. After verification of status, the Chief incident controller will communicate and announce the ALL CLEAR instruction to sound the ALL CLEAR SIGNAL.

# 9.5.2 | ACTION OF SALVAGE TEAM

After overcoming the emergency occurred in factory, the salvage team will act to clean/normalise and to decontaminate the affected area/section, so that work can be reinstated. The action taken by salvage teams are as follows:

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- a) Clean/remove the vapour of toxic material present in atmosphere by means of exhaust/suction equipment.
- b) Proper checking/maintenance of all the affected plant & machinery of affected section and to restore them again in working condition
- c) Find out the root cause of the problem and develop corrective action plan after analysis so that recurrence of the problem can be avoided. Inform to CIC after reinstatement of affected area in its original position and production has been restored within the plant.

# 9.5.3 | ACTION OF MEDICAL CREW AND FIRST AID TEAM:

Action to be taken by Medical Crew and First Aid Team is as follows:

- a) After knowing/hearing/receiving the information about accident in the factory, one of the trained first-aider with Doctor (if available) will rush to the site and give preliminary First-Aid to the injured, if any. They will simultaneously inform the doctor/medical crew of the organization about the condition.
- b) After giving First aid, call ambulance/vehicle to carry the injured for providing better medical facility, to the medical center/hospital/OHC.
- c) Allow the ambulance/evacuation vehicle/outside medical agency to go through factory gate without normal checks.
- d) Rescue of victims/casualities on priority basis.
- e) To take and pass out the information to the senior officials as well as family members of injured during treatment in Hospital/medical Center.

#### 9.5.4 | ACTION OF OTHER TEAM/PERSONNEL

- a. On hearing the ALL CLEAR siren, all persons of the concerned plant section, other than fire staff shall return to the place of duty and resume duty.
- b. Fire fighting crew assisted by the staff, as required, shall return all first-aid and fire fighting appliances to the exact locations and assist salvage work if so required. Empty fire extinguishers and empty first aid boxes shall be kept isolated for further refilling action by concerned person.
- c. The Chief Incident Controller and Work Incident Controller (CIC and WIC) along with the concerned plant in-charge and Security Officer shall thoroughly examine the premises for any traces of remaining fire. If satisfied, advice for restoration of production shall be issued by the Chief Incident Controller.

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- d. The security staff shall protect or guard the area till the security of all movable articles is ensured by keeping them in safe custody or removed to safety zones.
- e. A formal Enquiry-Committee shall be constituted by the Manager to investigate the reasons and to take preventive action to avoid re-occurrence in future.

Arrangement for training of SPIL employees and workers as to how to react during an emergency situation and use different equipments necessary for ensuring safety at hazardous works/situation shall be effectively ensured by the organization.

In SPIL, workers will be trained to take necessary action in case of emergency. Mock drill will be conducted for security personnel and process plant personnel to meet the emergency requirements.

# CHAPTER - 10 ACTION & SAFETY MEASURES FOR ELECTRICAL INSTALLATION

# 10.1 | GENERAL ASPECTS

In this modern world of civilization, electricity plays an important role. The current that flows through human body depends upon the voltage and persons body resistance. Normal human resistance varies from 1000 to 10000Ohms. If even 5milli-ampere (mA) current passes through the heart of a man, a potential for life collapse exist. So whenever a part of human body come in contact with electric current, the potential for injury exist depending upon the type and amount of current and self resistance of human body. The severity of the injuries by electric shocks depends upon:

- a) The amount of current flowing through the human body
- b) The path of current has taken through body to the earth, a weaker current passing through heart is more dangerous than a relatively stronger current passing through any other parts of body
- c) Length of time victim is in contact with charged electrical line
- d) Type and characteristics of electrical energy e.g. voltage, conductor, system
- e) Physical condition of victim.

# 10.2 | ELECTRICAL SHOCK (ELECTROCUTION)

- 10.2.1 In order to protect the plant personnel from electrical shock hazards, it is essential to get acquainted with the nature and use of electrical equipments in a safe manner. It is possible to avert the electrical shock at all times through awareness. Following are the pre-requisites to avoid any electrical shock to the workers at workplace which is following within the processes of SPIL:
  - a) A worker must wear rubber sole safety shoes.
  - b) He must use good quality ISI marked electrical rubber hand gloves while undertaking any electrical repair/maintenance work.
  - c) He should ensure to isolate/switch off the line before commencement of work.
  - d) He should thoroughly check any leakage current, improper earthing or non-isolated electrical circuits in the surroundings.
  - e) He must ensure that entire work area is duly earthed and is tested through meggar.
  - 10.2.2 | It has been observed that most of the electricians are aware about the complexity of electrical working, but still a lot of electrical hazards used to occur in industries. The sole reason is the negligence and improper use of safety gadgets or poor isolations.

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# 10.2.3 | SYMPTOMS IN CASE OF ELECTRIC SHOCK

- Sudden spasm
- Burn
- Severe pain
- Cries a loud and falls on the ground
- Unconsciousness
- Breathing impaired or stopped
- Burns leading to severe surgical shock

# 10.3 | FIRST AID:

"ANY DELAY IN FIRST AID OF THE AFFECTED BODY IN ELECTRIC SHOCK IS A DELAY FOREVER". Hence it is ensured that the provision of first-aid is not delayed in case of emergency situations endangering the life of the victims. It has been understood that:

- the current must be cut off or the plug should be pulled out.
- the first aider must not touch the victim or the live conductor.
- it is difficult to cut off the current the victim has to be separated by using a dry coat rope, stick, etc.
- if there is dry wooden chair or rubber sheet the first aider must stand on it and then separate the victim.
- if the cloths are smoldering the spark should be extinguished.
- artificial respiration is to be started immediately. This may be done if the victim is
  under unconscious state with pulse count is less. The artificial respiration should be
  continued till the doctor has arrived. One may like to continue for at least 8 hours
  before abandoning the case as dead. When the patient start swelling, one may
  understand that spontaneous breathing is being revived.
- artificial respiration should be continued till normal movement of breathing is fully established, as the respiration may fail again if left earlier.
- a blanket should be kept & put around the patient, the patient must be kept warm to treat the shock. He may be given warm sweet drinks if he is conscious otherwise it may cause harm.
- superficial burns of lightening strange may be covered with a septic dressing.

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- the deeper burns caused from contact with live conductors may be covered with clean sheet and the patient will be evacuated to a hospital without any further delay.
- external cardiac massage may be given if the pulse is not felt even after artificial respiration.

# 10.4 | SAFE USE OF ELECTRICAL EOUIPMENTS

Safe use of electricity is vital. At SPIL, electrical safety is a dominant parameter of its safety management system. Substation electrical safety standards will be verified during regular internal audits conducted by external agency. Removal of vegetation inside substation (switchyard), arresting oil leakage from transformer, earth pit controls are some of the elements which are proposed to be taken care of in order to avoid any electrical hazard. Rotating parts of the electro-mechanical equipments viz. prime movers (motors), gear boxes appropriately covered from outside. Electrical terminations are properly checked for any leakage current and use of cut wires have been completely prohibited. Hence measures for safe use of electrical equipments have been identified and controlled adequately.

# 10.5 | POLICY TOWARDS USE OF ELECTRICAL COMPONENTS/EQUIPMENTS

- 1. Do not use damaged plugs, wires, switches, etc.
- 2. Do not try to unscrew the electrical appliances under power supply ON condition.
- 3. Do not touch the electrical appliances with wet helmet when charged.
- 4. Avoid multiple connections in a single switch or socket.
- 5. Do not keep wires under hanging or loose condition. Instead electrical fittings should be safe and properly terminated.
- **6.** Wherever possible, use of metal clad plugs and sockets are to be used. Use of 3-pin plugs is preferred over 2-pin plugs due to inbuilt earthing.
- 7. An effective preventive maintenance plan for all the electrical equipments have been made and adhered to.
- 8. An isolation system is in place which is required to be followed during maintenance of electrical installations.
- 9. Use rubber insulated tools and rubber hand gloves for working during supply or in its line. Use of rubber mats is mandatory beneath the charged HT control panels.
- 10. Danger boards have been properly placed outside chemical storage area.

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# 10.6 | SUPPLY FAILURE

In case of electricity supply failure due to internal problem or due to fault in Diesel Generator set supply occurs then:

- 1. First of all MOCB will be tripped and fault detected.
- 2. Following safety equipments will be provided to electrician:
  - a. Hand Gloves
  - b. Goggles
  - c. Safety Apron

After detection of fault, the same will be rectified and informed to Plant Manager before switching on the line. Then the line is switched on.

- 3. The following safety equipments are provided in control room for any emergency:
  - a. First Aid Box
  - b. Artificial respiration chart
  - c. Discharge rod
  - d. Hand Gloves
  - e. Asbestos apron
  - f. Goggles
  - g. Fire Extinguishers and Sand Buckets

# 10.7 | EXPLOSION

It has also been observed that sometimes explosion occurs in Oil Circuit Breaker and in Oil cooled power and distribution transformers. Such explosion takes place only when oil is overheated due to instantaneous or consistent increase in the temperature of winding, which may be the result of overloading. To prevent overloading, safety devices and control equipments are properly installed with all such equipments. The sub-station transformer is operated under the specified load only. Current flow is constantly monitored and load is reduced with respect to increase of current. Further, oil temperature gauges are installed in transformer and hooters are also installed to raise the buzzer in case of overheating. When temperature increases beyond the specified limit, the hooter get activated and then load is reduced or power is switched off until the transformer is cooled down. Periodical testing of transformer, cable, oil and auxiliary equipments are also to be carried out by electrical maintenance department to avoid explosion.

# 10.8 | POWER CABLES

Power cables are to be secured properly and to be protected from physical hazards. All junction boxes should be protected and supported by checking of earthing and leakage current from time to time. All junction boxes will be fitted with cable jointing compound.

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# 10.9 | TRANSFORMER:

# (A) Distribution Transformer

Distribution Transformer will be located in substation with free air flow for natural cooling. The same is mounted at height from ground level on structures to protect it from any undue physical damage. Temperature of oil is continuously monitored and the quality of oil is also being checked periodically.

# (B) Sub-Station

Sub-Station is located in the plant near administrative building with proper fence and facilities provided to avoid entry of reptiles such as snakes etc. Stone ballasts is spread inside the sub-station to avoid any green vegetation. Fire extinguisher and fire buckets will be provided to mitigate any fire incidence. It is ensured that no ferrous or metal parts are stored within a radius of 15M from the substation to avoid any undue electrocution. Further, substation is duly fenced and no drain flows around it. It is ensured that there is no water accumulation around it during the rainy season.

The following check points have been incorporated in preventive maintenance plan of electrical substation and transformer area:

- a) Checking the quantity of oil
- b) Checking of any leakage from transformer
- c) Checking leakage from gasket or oil tube or transformer
- d) Suitable extinguisher installed near transformer area and is easily accessible
- e) Periodic checking of control switches, starters and terminations
- f) All operating handles and reset buttons are kept free for operation.
- g) Checking of all type of protection in relay
- h) Terminal of cables are checked periodically
- i) Checking of contacts and their replacement as per requirement
- j) Periodic checking of MOCB and ACB and ELCB

At SPIL, all types of protection is provided in sub-station which are essential and vital. Vent of Diesel Generator room away from processing area is so kept such that there is absolutely no chance of fire. D.G. Sets will be used mainly to meet the subsidiary power demand during electricity failure from grid to meet the emergency power requirements. Suitable lightening arresters will also be provided in the sheds.

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# CHAPTER 11 TRAINING, DRILL & FUNCTIONING OF EMERGENCY PLANNING

# 11.1 | MOCK DRILL/REHEARSAL SCHEDULE MONITORING COMMITTEE

For effective functioning of the Emergency Planning during the need of hours, full Mock Drill is proposed to be carried out atleast once in a year.

The committee may invite any other official/expert, if considered necessary. The Committee has a delegated responsibility to supervise the following activities:

- a) Functioning of Emergency Control Center (ECC) very effectively especially, to ensure availability of all facilities as mentioned in the plan and to make the functions healthiness.
- b) To evaluate communication of the emergency plan to all segments of employees to familiarize them about their responsibilities in case of any disaster, including evaluation of behavior of employees and other parameters that may affect safety performance of the organizations safety management system.
- c) To ensure that the legal and statutory requirements as per Factories Act 1948 and CG Factory Rules 1962 are complied and no gap exist for such compliances.

# 11.2 | EMERGENCY PLANNING EFFICACY DRILL MONITORING COMMITTEE

Emergency planning efficacy drill is proposed to be carried out once in every six months. EP efficacy drill is being carried out under the supervision of *Monitoring Committee*. Committee may invite any other Official(s)/Expert(s) to assist its functioning. Requirements given below are related to the drill activities which is supervised by committee for its being effectiveness. The committee is responsible to ensure the compliance to these requirements for making the drill an useful and result oriented exercise.

- a) All members will be trained about their responsibilities/duties. All of them will be well aware of the evacuation routes, direction of evacuation, assembly points and the equipments to be used during evacuation or after the evacuation.
- b) All employees and workers (including contract workers) will be fully trained to rescue their colleagues, who are affected due to disaster. In case they are unable to rescue their colleagues, they should know the next higher delegation who is capable to handle such cases.
- c) All employees will be fully trained in the use and maintenance of First-Aid equipments including breathing apparatus. Suitable first-aid appliances with required quantity of medicines will be made available at identified core locations so that every injured person shall have an easy access to such first-aid boxes in case of emergency.

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- d) All warning alarms will be functional.
- e) All telephone lines/communication systems will be provided in the control room.
- f) All employees to be made aware of the authority declaring EMERGENCY.
- g) Concerned official(s) authorized to inform the District Authorities, State Authorities and Corporate Center in the state of EMERGENCY are well aware of their role.

# 11.3 | EMERGENCY PLANNING MOCK DRILL

Mock Drill is the exercise to ascertain effectiveness and proper implementation of the emergency planning to counter any probable disaster with optimized utilization of resources in order to minimize the loss of life and loss of properties.

The mock drills have the following motive to work out the existing system related to emergency planning and hazard mitigation:

- Effectiveness of the emergency planning.
- Availability of all facilities as per system laid down in the Onsite Emergency Plan.
- Constraint being faced to meet with legal and statutory requirements.
- Any shortcoming identified during the course of mock drill.
- Improvement(s) needed to make the mock drill more effective and result oriented.
- The outcome of each mock drill will be reported to the Plant Manager by the Chairman of Safety Committee in a written report covering about mentioned and any other important points related to the On-site Emergency Planning and its Mock Drill exercise, with the assistance of the committee members.
- Suggestions, recommendations submitted by the committee, if any for improvement
  of the plan will be rigorously worked out considering all pros and cons to arrive at a
  feasible and more effective working system. The decision so taken and amendment if
  so made in the plan/system is intimated to the Directorate of Factories, Government of
  Chhattisgarh, Raipur for obtaining approval thereof.

# 11.4 | MOCK DRILL EXERCISE/REHEARSAL SCHEDULE

It is imperative that the procedures laid down in the Onsite Emergency Plan are put to the test by conducting full mock drill atleast once in six months. The mock drill is being carried out in a planned manner but without pre-intimation to workers, and their response time is recorded. The step-by-step mock drill is conducted in a manner as stated below to ascertain its effectiveness and to obtain the intended results thereof:

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# FIRST STEP:

Test the effectiveness of the communication system.

#### SECOND STEP:

Test the speed of the mobilization of the plant.

#### THIRD STEP:

Test effectiveness of search, rescue and treatment of casualties.

#### FOURTH STEP:

Test emergency isolation and shut down as well as the remedial measures taken on the system.

# FIFTH STEP:

Conduct a full rehearsal of the actions to be taken during an emergency.

# FINAL STEP:

Prepare the mock drill exercise report covering all points related to deficiencies, deviations, shortcomings, lacunas, constraints, etc. identified during the exercise. Suitable measures to counter with above mentioned shortcomings will be recommended and also suggestion will be made in order to improve upon the method or output of the drill.



# CHAPTER 12 EMERGENCY POLICE SERVICE

# 12.1 | MAIN TASK

Main tasks that the police force is likely to perform during the calamities are as mentioned below:

- 12.1.1 Assistance in stopping/controlling the sources of danger.
- 12.1.2 Assistance in securing human being and cattle trapped in the affected area.
- 12.1.3 Assistance in rendering first aid and medical facilities to those in need.
- 12.1.4 Maintenance of Law and Order at the scene of disaster and prevention of antisocial activities/chaos which have a negative impact on the situation.
- 12.1.5 Assistance in evacuating persons not affected so far but are likely to be affected later if not rescued in time.
- 12.1.6 Assisting in feeding and other basic services to the victims rescued from the affected site.
- 12.1.7 Removal of the dead bodies, their identification and disposal in case of any casualties have occurred.
- 12.1.8 Assistance in providing shelter to those rendered homeless.
- 12.1.9 To prepare list of missing persons
- 12.1.10 To communicate the information of disaster to other government authorities of disaster control committee at district level.
- 12.1.11 To contact responsible person in factory for taking appropriate steps to minimize the damage due to disaster.

#### 12.2 | CLASSIFICATION OF THE CONTINGENCY

In general, contingency will be classified in either of the following categories by the Police Head Quarters of Bilaspur.

- a) MAJOR : A calamity which is affecting the factory premises concerned and its close vicinity with causalities less than 10.
- b) SERIOUS : A disaster which is affecting considerable jurisdiction of a Police Station or any important part of city.
- c) GRAVE : A major portion of the city or almost the whole of the city is affected.

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In view of the process of manufacturing involved in our unit, only **Major** type of calamities as listed above with a potential of casualties <10 is only possible.

# **12.3 | ACTION**

The major contingency will be handled by the concerned Police Station, situated in, Koni which is at a distance of 2.5Kms from the unit. Police Station, Koni under immediate supervision of the concerned Station Officer (S.O.) and in consultation with Deputy Superintendent of Police, HQ Bilaspur. The information shall be given to the Police control room of every incident and steps taken promptly. In case of any calamity, Police service is available on Phone No.100 & 07752 2452308.

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# CHAPTER 13 MISCELLANEOUS

#### 13.1 | SAFETY PRECAUTIONS DURING LOADING/UNLOADING:

- a) Where trucks loading/unloading job will be done by crane within our organization, none should be allowed to remain nearby.
- b) During unloading of scraps, billets and other metallic materials including its shifting, proper material handling equipments have been provided and due care is taken to mitigate any potential hazard so that scrap must not spread any where.

# 13.2 | SAFETY PRECAUTIONS IN CIVIL WORKS AND JOB AT HEIGHT:

- a) Only trained civil workers shall be engaged to perform civil construction work.
- b) Scaffolding and shuttering materials will be used in sound condition, preferably ISI marked and is in good working conditions.
- c) The civil workers will be trained not to move from their work site to other plant area until & unless assigned task has been completed.
- d) While performing the work at height, proper safety/protective appliances will be ensured to be used by worker and appropriate Permit To Work will be used for isolation of charged equipments.
- e) The maintenance Work at Height is strictly performed under the supervision of shift incharge or supervisor.

# 13.3 | SAFETY PRECAUTIONS FROM OUTSIDE DISASTER/DANGERS:

# 13.3.1 | BOMB HOAX/THREAT

There may be possibility of some terrorist activities within the plant area. Under such condition, necessary arrangements have been made in the factory to evacuate all the workers from factory premises to avoid any harm to them resulting out of such terrorist activities. In case of receiving a bomb threat in the plant, the following actions are advised:

- Be calm and composed and do not show signs of panic.
- Try and gain the trace of the caller by simple method (e.g. your first name may be given, if possible or say you are new to the organization). Be polite and courteous on the phone.
- Engage the caller for as long as possible as it may help later to trace the call or could help the caller give away critical hints. Do not ever let the caller hang up quickly.

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- Note down the attributes of such caller, such as accent, any background noise (station, airport, busy highway, hotel, TV in living room etc). This evidence could be crucial and useful at a later stage during investigation.
- Do not show any signs of sarcasm on the phone (could set of the undesired reaction) or that you do not consider the call to be of a serious nature.
- Convince the caller about your acceptance of his/her threat information and act accordingly. This is possible if you gain the confidence of the caller during conversation.
- Try to find out from the caller the location of the bomb, type and quantum of threat, and other relevant informations which could be useful.
- In case of threats by some terrorist organizations, engage him in conversation (if confident) on ideological causes, how this move would realize their objective etc.
   But only trained staff should do this.

# 13.3.2 | EARTHQUAKE

- Earthquake pose unique problems by causing complete upset of infrastructure and
  making rescue operations difficult. It disrupts communication systems, causes
  power failures, disruption of emergency fire fighting systems and increases the
  possibility of pipeline (oil, gas and water) bursts. In addition, it could prevent
  movement of ambulances, fire fighting personnels and fire fighting vehicles to
  reach to affected area. Earthquakes also result in major structural debris causing
  secondary damage and could adversely affect the entire emergency arrangements
  geared up to mitigate such problems.
- The main action during earthquake incidents include preventive (pre-incident), during incident and post-incident actions. Each earthquake, depending upon its intensity (as measured on the modified Marcalli Scale) would have different extent of damage. Some mild earthquakes could result in minor tremors felt within and perhaps outside the administration building, major ones could result in complete destruction of storage tanks, rupture of pipelines and complete collapse of admin block building.
- Basic earthquake related behavioral training to staff (including how to recognize, do's and don'ts etc.) will be imparted by safety officer from time to time.
- As blackout is possible, a kit containing flashlights, portable radio, basic tools etc. shall be available for emergency.
- Basic precautions such as sitting away from wall hanging items, bolting of almirahs to the wall rather than loosely lying cupboards, pasting tape to the glasses to avoid excessive shatterings.
- Actions during an earthquake would depend upon its severity and the extent of damage - however, the basic steps for safeguarding the safety (top most criterion)

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include activation of the fire orders, as fires are likely in case of major earthquakes. Pipelines and LDO storage tank would be expected to rupture, resulting in large scale spillage and possible fire of the LDO. The fire fighting system is likely to be incapacitated. In addition, power supply may be cut off. To mitigate such emergency situation, offsite plan is there in place which will be activated immediately.

- The main action would involve cutting off the power supply (if not cut off on its own already) to avoid electrical shocks, fire etc. and halting any loading/unloading operations if in progress by emergency stoppage of pumps. Plan also includes sending away trucks and mobile lifting tools & tackles to safe zones already identified for the purpose.
- Dykes will be made to arrest undue flow of oil during rupture of oil tanks so that they will not flow to the manned area during earthquake emergencies.
- For personnel, important instructions include *Drop, cover and hold*. They will be trained to get under a heavy table or desk and hold on, or sit or stand against an inside wall if inside the admin block and unable to come out. Finally reach to emergency assembly points as soon as possible.
- Personnel will be trained to keep away from windows as these may shatter/crack resulting in possible injury.
- Training will also be imparted to the person outdoors under such situation to stay outdoors away from falling object (lighting poles, pipe racks, structural roofs etc) falling debris, trees and power lines.
- Post earthquake actions include experience aftershocks as they are just as serious as the main earthquake. Many earthquakes in the past were multiple tremors and not a single quake.
- Immediately clear the debris, broken glasses, metal pieces and sharp edges from the affected area and barricade badly damaged areas for unauthenticated entrance of the personnel.
- Restore and start the electricity supply under controlled and phased manner under strict guidance of CSPDCL representative. Use a portable radio for receiving information under emergency situation.
- Assist in rescue of co-workers and other persons who could be present in the factory as per the fire orders.

# 13.3.3 | FLOOD

 Flood is the natural calamity that has the potential to cause widespread damage to human being and property. Flood planning is perhaps the best protection against flood damage. Flood however occur after pre-warming, enabling advance action. Flood could completely submerge process equipment, ETP area, furnace oil storage tanks.

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- SPIL employees will be trained to cut-off electricity supply during flood situation and switch-off/discontinue all operations within the factory.
- A flood kit has been maintained which contains portable radio, flashlight and emergency supplies. An environmental management system exist within the organization to keep drain lines clean so that flooding intensity can be reduced within the premises. Scrap storage area is earmarked and controlled in order to avoid any water accumulation.
- As the SPIL facility is located in an open area of village Tumidih, such accumulation
  of water has not been experienced during last 8years. Meteorological data also reveals
  that there is very low possibility of flood occurrences in the factory area. However
  organization is equipped with necessary equipments for flood mitigation. Operation
  control measures are identified and documented to control flood or water
  accumulation condition.

# 13.4 | INSTRUCTIONS TO SPIL PERSONNEL NOT ENGAGED IN RESPONDING EMERGENCY

- Do not panic
- Proceed to assembly point as soon as emergency siren is sounded
- Do not rush to the scene to be a spectator
- Do not engage telephone/talk back system and other communication channels unnecessarily.
- Do not approach control centers without any adequate reasons.
- Direct any guest/visitor/contractor's employee towards assembly points.
- Do not offer unauthentic information/unconfirmed facts/guess etc.

# 13.4.1 | BASIC STEPS FOR HANDLING VARIOUS EMERGENCIES EMERGENCY EVACUATION PROCEDURE

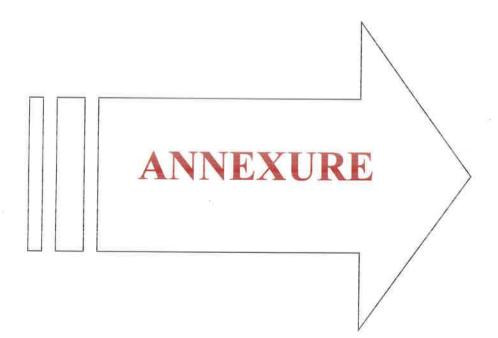
- a) On receipt of evacuation instructions the personnel in the affected area shall proceed to the designated assembly point.
- b) On receipt of evacuation intimation, personnel will close all the working gadgets, taking care that closing or shutting down operations does not lead to additional hazards.
- c) When the emergency is announced, one security guard at the plant gate will be posted by security section and he will secure the vehicle gates halting all routine traffic and material movement into the affected site. Thus, guard shall clear the road from the main gate so that if outside emergency vehicles are needed the road will be clear.

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- d) All personnel of the site should remain at their announced assembly points until the clear signal is announced.
- e) When the emergency announcement has been made outside, contract workers on site are to be instructed to report to the gate. Their supervisors should make a count of all personnel and report this data to the security at the gate.
- f) Evacuation of the people will be especially in the opposite direction of exposure/wind direction.
- g) On receipt of evacuation instructions the personnel in the affected area shall proceed to their designated assembly point.

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# ANNEXURE-1 IMMEDIATE ACTION IN CASE OF ACCIDENTS IN LABORATORY DUE TO CHEMICALS

SL.NO.	ACCIDENTS	FIRE AID
l <sub>ec</sub>	Combustible liquid	Don't run abbot, lie down and roll on the floor - wrap the victim by blanket.
2.	Large Heat burn	Treat with gauge, thoroughly socked in normal saline
3.	Small Heat burn	Treat with anti burn cream.
4.	Skin of Eye effected by caustic liquids	Immediately wash caustic liquid from the skin of eye at nearest tap/eye washer.
5.	Skin affected by  a) Chemicals b) Alkali c) Bromine  d) Silver Nitrate	Apply Sodium bi-Carbonate (NaHCO <sub>3</sub> ) solution Apply dilute Ammonium chloride solution (NH <sub>4</sub> Cl) Apply dilute Ammonium as quickly as possible than apply a thick paste of Sodium Bi- Carbonate and water. Apply normal saline solution
6.	Eye affected by caustic liquid	Apply Normal Saline Solution with an eye bath
7.:	Discomfort due to breathing small quantities of chlorine or bromine	Continuously apply Ammonia Gas from bottle of dilute Ammonia Solution
8.	Chemicals entered in mouth	Spit chemicals from mouth and wash mouth thoroughly with water.
9.	Cuts	Apply surgical spirits or industrial ethylated spirit and soft cream.

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# ANNEXURE - 2 : STATE AUTHORITY OFFICERS LIST OF IMPORTANT STATE/LOCAL AUTHORITY

1.	Commissioner	Bilaspur	07752-220564
2,	Collector	Bilaspur	07752-223344
3.	Superintendent of Police	Bilaspur	07752-223330, 100
4.	Chief Medical Officer	Bilha	07752-266011
6.	Municipal Corporation	Bilaspur	07752-222642
7,-	Deputy Director (Health & Safety, Bilaspur)	Bilaspur	94252-19185 07752-220116
8.	Ambulance	Rotary Club, Lions Club, Red Cross Nagar Nigam BSP	108
9.	Dy.Director, Industrial Health & Safety, Bilaspur	Old Bus Stand, Bilaspur	0771-2442360
10.	Chhattisgarh Environment Conservation Board	Vyapar Vihar, Near Pt.Deendayal Upadhyay Park, Bilaspur	07752 261172

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# ANNEXURE – 3 BRIEF DESCRIPTION OF ACCIDENT TOOK PLACE IN THE RECENT PAST

S. No	Nature of Accident	Date of Accident	Name of Worker get Affected
1	Hazardous Accident resulting in death of worker	NIL	NIL
2.	Hazardous Accident resulting in death of worker after prolonged sickness	NIL	NIL

**Note:** Being a new venture, till date no accident has occurred or recorded within the SPIL unit premises. However a system is there in place to duly report the accidents occurred to the competent authorities and undergo root cause analysis effectively in order to avoid recurrence of the problem.

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# Material Safety data sheet High Speed Diesel

# MATERIAL SAFETY DATA SHEET Diesel oil/HSD

# 1. Chemical identity

Chemical name Diesel Oil		Chemical cla	sification:	Flanunable liquid
Synomyms: Automotive Dies	el Oil	Trade name: 1	HSD	
Formula Range: C13 - C14	C.A.S. NO.68476-3	D-2. UN.NO	. 1202	
Regulated identification Codes Label:	Shipping name: Hazchem code o			
	Hazardonu waste	N.A.		
Hazardous ingredients	CASNO.	Hazardous i	ngredients	CASNO.
Diesel	68476-30-2	Bensene Tra	60	71-43-2
		Naphthalene	Trace	91-20-3
		Sulphur	Trace	7704-34-9
Diesel is complex mixture of	hydrocarbons It's e			
	and the refining me			

# 2. Physical and chemical data

Boiling point/Range (deg.C): 215 - 376. Physical state: Liquid. Appearance: yellowish brown Melting/freezing point (deg.C): N. A.

Vapour pressure. 2.12 to 26mm Hg at 21 deg C.

Odour. Perceptible odour Vapour density: N.A.

Solubility in water @ 30 deg. C. Insoluble Specific gravity: 0.86 - 0.90 at 20 deg C

Others: Pour Point: 6 - 18 deg. C.

# 3. Fire and explosion Hazard data

Flammability: Yes LEL: 0.6% Flash point(deg C): 32 (OC) TDG Flammability: class 3 UEL: 6% Flash point(deg C): N.A. (CC)

Auto Ignition Temp: 225 deg. C

Explosion sensitivity to impact, not sensitive to Mechanical Impact. Explosion sensitivity to static electricity. For vapors sensitivity exist

Hazardous Combustion Products: carbon monoxide, Nitrogen oxide, and other aromatic

hydrocarbons

Hazardous Polymerization: N.A.

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# Material Safety data sheet High Speed Diesel

Combustible liquid: Yes	Explosive material: Yes	Corrosive material: No
Flammable material; yes	Oxidiser: N.A.	
Pyrophoric material: N.A.	Organic peroxide:	NA

# 4. Reactivity data

Chemical stability. Stable

Incompatibility with other material: oxidizers such Peroxides. Nitric acid and Percharates

Huzardous reaction products. on fire it will liberate some amount of carbon monoxide, sulphur dioxide Nitrogen oxide, and other aromatic hydrocarbons

# 5. Health Hazard data

Routes of entry: : Inhalation. Skin absorption ingestion

Effects of Exposure / symptoms: excessive inhalation. Vapors cause rapid breathing. excitability, staggering, headache, fatigue, nausea and Venticing drowsiness, narcosis commisions, coma

Skin Contact: Skin-dryness, cracking irritation eyes watering stinging and inflammation.

Emergency treatment. In case of eye or Skin contact, flush with plenty of water. Remove soaked clothing in case of excessive inhalation move the victim to fresh air, obtain medical assistance

LDvo (Oral-Rat) : > 5g/kg L.C. irat Alors 1 Seim3 Permissible Exposure limit. N.A. Odour threshold. N.A.

TLV (ACGIH): 800 ppm STEL: N.A. NFPA Hazard signals Health Flammability. Reactivity Stability Special 2

# 6. Preventive measures

Personal Protective equipment. Canister type gas mask. PVC or Rubber. Goggles giving complete protection to eyes. Eye wash fountain with safety shower.

Handling and storage precautions: Do not expose to heat and naked lights, keep containers and valves closed when not in use.

# 7. Emergency and first aid measures

Fire

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# Material Safety data sheet High Speed Diesel

Fire extinguishing media. Foam, Carbon dioxide, Dry Chemical Powder. Water may be used to cool fire-exposed containers.

Special procedure. Shut off leak, if safe to do so, Keep non-involved people away from spill site. Eliminate all sources of ignition.

Unusual hazards: it will spread along the ground and collect in sewers

#### Exposure:

Skin contact; in case of contact with Skin flush with fresh water, remove containment clothing.

Inhalation: in case of excessive inhalation move the victim to fresh air, If problem in breathing give artificial respiration, give oxygen, obtain medical assistance Ingestion: Give water to conscious victim to drink; do not induce vomiting.

Antidotes: Dosages: N.A.

#### Spills:

Steps to be taken Shut off leak, if safe to do so, Keep non-involved people away from spill site. Eliminate all sources of ignition. Prevent spill entering in to sewers, for Major spillage contact Emergency services

Waste Disposal method: N.A.

3. Additional Information /reference

· /	
9 . Manufacture/Suppliers Data	
Manufacture( Name Of Firm. ) : Hindustan Petroleum Corporation	
Supplier Dealers Data.	
Name	
Mailing address	
Telephone	

#### 10 DISCLAIMER

Contact Persons

Information contained in this material data sheet is believed to be reliable but no representation, guaranty or warranties of any kind are made for suitability for particular application or result o be obtained from it. It is up the seller to ensure the Product sold by them is relevant to information contained in MSDS

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# **Material Safety Data Sheet** Gaseous Oxygen

# Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product name: Oxygen (Gaseous),

# Section 2: COMPOSITION/ INGREDIENT INFORMATION

C.A.S.	CONCENTRATION %	Ingredient Name	OSHA PEL	ACGIH TLV	OSHA STEL
7782-44-7	Typically > 99 (MSDS also applies to 90 - 99%)	OXYGEN (+N2 & Ar)	NONE	NONE	NONE

#### Section 3: HAZARD IDENTIFICATION

Emergency Overview: Oxygen gas is colorless, odorless, non-toxic cryogenic liquid or colorless, odorless, oxidizing gas. Liquid releases will quickly vaporize to gas.

> The chief physical hazard associated with releases of the gas is its oxidizing power which can greatly accelerate the burning rate for both common and exotic combustible materials. Emergency personnel must practice extreme caution when approaching oxygen releases because of the potential for intense fire.

The primary health hazard at atmospheric pressure is respiratory system irritation after exposure to high oxygen concentrations. Maintain oxygen levels in air above 19.5% and below 23.5%. While up to 50% oxygen can be breathed for more than 24 hours without adverse effects, high concentrations in open air accelerate combustion and increase the risk of fire and explosion of combustible or flammable materials.

Route of entry: Inhalation, skin and eye contact.

Effects of acute exposure

Eve contact: No adverse effects expected. Skin contact: No adverse effects expected. .

Inhalation: May cause breathing difficulty.

Prolonged exposure to high oxygen levels (>75%) can cause central nervous system depression: signs/symptoms can include headache, dizziness, drowsiness, poor coordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

May cause coughing and chest pain.

May cause lung damage.

May cause soreness of the throat.

**Ingestion**: Not a likely route of exposure.

Effects of chronic None known.

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Reproductive effects: Oxygen deficiency during pregnancy has produced

developmental abnormalities in humans and experimental

animals.

Section 4: FIRST AID MEASURES

Skin contact: None required. Eye contact: None required.

Inhalation: RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS

OF EXPOSURE TO THIS PRODUCT WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-

Contained Breathing Apparatus should be worn.

Remove victim(s) to fresh air, as quickly as possible. If not breathing qualified personnel should administer artificial

respiration. Get medical attention. IKeep person warm and at rest.

Ingestion: No first aid should be needed.

Not considered a potential route of exposure.

# **Section 5: FIRE FIGHTING MEASURES**

Flammability: Oxidizer.

Conditions of Contact with flammable materials. flammability: Vigorously accelerates combustion.

**Extinguishing media:** Use appropriate extinguishing media for surrounding fire.

**Special procedures:** Self-contained breathing apparatus required.

Firefighters should wear the usual protective gear. Cool fire exposed containers with water spray.

Personnel should be evacuated, if necessary, to upwind area.

Remove containers from fire area if without risk.

**Auto-ignition** Not applicable. temperature:

Flash point (°C), method: Not applicable.

Lower flammability limit (% vol): Not applicable.

Upper flammability Not applicable.

**Explosion Data** 

Sensitivity to mechanical impact: Avoid impact against container.

Explosive power: Closed containers may rupture or explode due to pressure build-

up when exposed to extreme heat.

Cylinders are equipped with temperature and pressure relief

devices but may still rupture under fire conditions.

Section 6: ACCIDENTAL RELEASE MEASURES

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Leak/Spill: Evacuate all non-essential personnel.

Stop leak without risk. Wear gloves and goggles

Use a self-contained breathing apparatus.

Ventilate area. Monitor the surrounding area for Oxygen level

#### Section 7: HANDLING AND STORAGE

Handling procedures and Protect system components against physical damage.

equipment: Use adequate ventilation.

Avoid inhalation.

Never work on a pressurized system.

If there is a leak, close the upstream valve, blow down the system by venting to a safe place, then repair the leak.

Storage requirements: Use storage containers, piping, valves and fittings designed for storage and distribution of Gaseous Oxygen. Protect cylinders against physical damage. Store in cool, dry, well-ventilated. fireproof area, away from flammable materials and corrosive atmospheres. Store away from heat and ignition sources and out of direct sunlight. Do not store near elevators, corridors or loading docks. Do not allow area where cylinders are stored to exceed 52°C (125°F).

> Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap inplace (where provided) until cylinder is placed into service and after it is taken out of service.

> Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Use check valve or trap in discharge line to prevent hazardous backflow into the cylinder. Do not use oils or grease on gas-handling fittings or equipment.

After use, close main cylinder valve. Replace valve protection cap (where provided). Mark empty cylinders "EMPTY".

# Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

# **Precautionary Measures**

Gloves/Type: Wear appropriate gloves.

Respiratory/Type: NIOSH/MSHA approved respirator.

Eye/Type: As per local regulations.

Footwear/Type: Safety boots per local regulations.

Clothing/Type: Wear adequate protective clothes.

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Other/Type: Eve wash facility should be in close proximity.

Emergency shower should be in close proximity.

Ventilation requirements: Mechanical ventilation is satisfactory. Ensure oxygen

concentration remains above 19.5% and Carbon Dioxide

concentration does not exceed 5000 ppm. Local exhaust at points of emission preferred.

Exposure limit of material Not available.

#### Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Gas

Appearance & odor: Colorless, odorless gas.

Odor threshold (PPM): Odorless.

Vapor pressure : Gas@ 70°F (21°C)

Vapor sp. gravity (air=1): 1.11 @ 70°F (21°C)

Volatiles (% by volume) 100%

Boiling point: -183°C (760 mmHg)

-297.4°F

Freezing point: -218.8°C

-361.8°F

Solubility in water (%): Slight.

# Section 10: STABILITY AND REACTIVITY

Chemical stability: Product is stable.

Conditions of reactivity: Heat

Hazardous Will not occur. polymerization:

Incompatible substances: Combustible materials.

Oils or grease.

Flammable materials.

Hazardous

decomposition products:

# Section 11: TOXICOLOGICAL INFORMATION

LD50 of product, species & route: Not available.

LC50 of product, species Not available.

& route:

# **Section 13: DISPOSAL CONSIDERATIONS**

Waste disposal: Gas will dissipate in air. Cylinders should be returned in the original shipping container, properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place.

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# Section 14: TRANSPORT INFORMATION

# DOT/ TDG classification:

For cylinder shipments:
Oxygen, compressed
UN1072
Class 2.2 (Non-Flammable Gas)
with subsidiary risk 5.1 (Oxidizer)



North American 122 Emergency Response Guidebook Number:

# Section 15: REGULATORY INFORMATION

WHMIS classification:



DSL status: Appears on DSL.

# **Section 16: OTHER INFORMATION**

#### Definitions and other useful data:

CAS #: The Chemical Abstract Service Number which uniquely identifies each constituent.

**ACGIH** - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

**TLV -** Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect.

OSHA - U.S. Occupational Safety and Health Administration.

**PEL -** Permissible Exposure Limit - The same value as a TLV, except it is enforceable by OSHA.

**IDLH -** Immediately Dangerous to Life and Health - A concentration from which one can escape within 30-minutes without suffering permanent injury.

# NATIONAL FIRE PROTECTION ASSOCIATION:

Health Hazard Rating Scale (Blue):

0 (material that on exposure under fire conditions would offer no hazard beyond that of ordinary

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combustible materials);

- 1 (materialsthat on exposure under fire conditions could cause irritation or minor residual injury);
- 2 (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury);
- 3 (materials that can on short exposure could cause serious temporary or residual injury);
- 4 (materials that under very short exposure could cause death or major residual injury).

#### Flammability Hazard Rating Scale (Red):

- 0 (minimal hazard):
- 1 (materials that require substantial pre-heating before burning):
- 2 (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]);
- 3 (Class IB and IC flammable liquids with flash points below 38°C [100°F]);
- **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F].

### Reactivity Hazard Rating Scale(Yellow):

- 0 (normally stable);
- 1 (material that can become unstable at elevated temperatures or which can react slightly with water);
- 2 (materials that are unstable but do not detonate or which can react violently with water);
- 3 (materials that can detonate when initiated or which can react explosively with water);
- 4 (materials that can detonate at normal temperatures or pressures).

#### TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms:

LD50 -Lethal Dose (solids & liquids) which kills 50% of the exposed animals;

LC50 - Lethal Concentration (gases) which kills 50% of the exposed animals;

ppm concentration expressed in parts of material per million parts of air or water;

mg/m3 concentration expressed in weight of substance per volume of air;

mg/kg quantity of material, by weight.

#### **REGULATORY INFORMATION:**

**EPA** is the U.S. Environmental Protection Agency.

WHMIS is the Canadian Workplace Hazardous Materials Information System.

**DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively, which assign DOT and **TDG** (Transportation of Dangerous Goods) identification numbers, hazard classifications, and proper shipping name and shipping label information. This material is hazardous as defined by 49 CFR 172.101 of the US Department of Transportation and Dangerous Goods as defined by Transport Canada Transportation of Dangerous Goods Regulations.

#### **USE OF THIS INFORMATION:**

Satya Power And Ispat Ltd.

Universal Industrial Gases, Inc. offers this information to customers, employees, contractors, and the general public to promote the safe use of this product through awareness of product hazards and safety information. Customers and others who use or transport or sell this product to others should: 1) Disseminate this information internally to all workplace areas, employees, agents and contractors likely to encounter this product; 2) Provide supplemental hazards awareness, safety information, operation and maintenance procedures to the workplace areas and employees, agents and contractors likely to encounter this product; 3) Furnish this information to all their customers who purchase this product; and 4) Ask each purchaser or user of the product to notify its employees and customers of the product hazards and safety information.

#### **DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:**

Universal Industrial Gases, Inc. has taken reasonable care in preparing this document, however, since the use of this information and the conditions of use of the product are not within the control of Universal Industrial Gases, Inc., it is the user's obligation to determine the conditions of safe use of this product. The information in this document is offered with no warranties or representations as to accuracy or completeness and it is the responsibility of each individual to determine the suitability of the information for their particular purpose(s).

Satya Power And Ispat Ltd.

Director

## SAFETY DATA SHEET FOR **Liquefied Petroleum Gas (LPG)**

#### 1. IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name

Liquefied Petroleum Gas (LPG)

**Proper Shipping Name** 

Petroleum Gases, Liquefied

Other Names

LPG, LP Gas, Propane, Butane, Autogas

Uses As an energy source in the residential, commercial and automotive markets.

A feedstock for the petrochemical industry and as a refrigerant.

Supplier Name

Elgas Ltd, A.C.N. 002 749 260

**Address** 

10 Julius Avenue, North Ryde NSW 2113 PO Box 1336, Chatswood NSW 2067

**AUSTRALIA** 

(02) 8094 3200 Telephone

+61 2 8094 3200 (Outside Australia)

Fax (02) 9018 0146

Website

www.elgas.com.au 1800 819 783 (24 hours)

**Emergency** 

+61 3 9706 9897 (Outside Australia) (24 hours)

#### 2 HAZARDS IDENTIFICATION

**GHS Classifications** 

Flammable Gases: Category 1

Gases Under Pressure: Liquefied Gas

**Pictograms** 





Signal Word

DANGER

**Hazard Statements** 

H220 - Extremely flammable gas

H280 - Contains gas under pressure; may explode if heated

Prevention

P210 - Keep away from heat/sparks/open flames/hot sources. No smoking.

P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped Response

P381 - Eliminate all ignition sources if safe to do so.

Storage Other Hazards P410 + P403 - Protect from sunlight. Store in a well-ventilated space.

High levels of exposure can lead to asphyxiation and fatal arrhythmia.

Refer to Section 11 of the SDS.

	3. C	COMPOSITION / INI	FORMATION ON IN	IGREDIENTS
LPG:	Propane Proportion:	Butane Proportion;	Autogas Proportion:	CAS Number: 68476 – 85 – 7
Propane:	40 – 99%	<5%	40 – 99%	0074 - 98 - 6
Propene	<60%	<5%	<20%	115 – 07 – 1
n-Butane, iso-Butane:	<7.5%	90 – 99%	<50%	106 – 97 <b>–</b> 8, 75 – 28 – 5
Ethane:	<5%	<5%	<5%	74 – 84 – 0
Ethyl Mercaptan (Odourant):	25 ppm	25 ppm	25 ppm	75 – 08 – 1

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Page 1 of 8 Last Review Date: October 2016

#### 4. FIRST AID MEASURES

In all cases seek medical attention and see the Elgas Super Cold Contact Injuries Hospital Information Sheet for further information and procedures.

Treatment for cold burns: Immediately flush with tepid water or with sterile saline solution, Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.

Inhalation Remove from area of exposure immediately.

Be aware of possible explosive atmospheres.

If victim is not breathing apply artificial respiration and seek urgent medical attention. Give oxygen if available. Keep warm and rested.

Skin Cold burns: Remove contaminated clothing and gently flush affected areas with

warm water (30 C) for 15 minutes.

Apply non-adhesive sterile dressing and treat as for a thermal burn.

For large burns, immerse in warm water for 15 minutes.

DO NOT apply any form of direct heat. Seek immediate medical attention.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a

doctor. Ingestion is considered unlikely due to product form.

Symptoms In high concentrations may cause asphyxiation. Symptoms may include loss of

mobility/consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness,

headache, nausea and loss of coordination.

Direct contact with the liquefied material or escaping compressed gas may cause cold burns.

Medical Treat sy

Attention & Special Treatment

Treat symptomatically. Severe inhalation over exposure may sensitise the heart to catecholamine induced arrhythmias. Do not administer catecholamines to an

Special overexposed person.

#### 5. FIRE FIGHTING MEASURES

#### Extinguishing

Stop flow of gas if safe to do so, such as by closing valves or by activating Emergency Shutdown System. If the gas source cannot be isolated, do not extinguish the flame, since re-ignition and explosion could occur.

Drench and cool cylinders or vessels with water spray from protected area at a safe distance.

If it is absolutely necessary to extinguish the flame, use only a dry chemical powder extinguisher.

Do not move cylinders for at least 24 hours. Avoid shock and bumps to cylinders. Evacuate the area of persons not fighting the fire.

Carbon oxides (CO, CO<sub>2</sub>) fumes may be produced should burning occur especially within an enclosed space.

Fire fighters should wear full protective clothing and be aware of the risk of possible explosion (especially in a confined space). Flashback may occur along vapour trail. Breathing apparatus is required in confined spaces.

Where possible, remove cool cylinders from the path of the fire. Do not re-use a fire-exposed vessel or cylinder – seek advice of supplier.

Specific Highly flammable.

Hazards Heating to decomposition produces acrid smoke and irritating fumes.

Product will add fuel to a fire.

Eliminate all ignition sources including cigarettes, open flames, spark producing switches / tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.

Precautions Highly flammable.

for Fire Temperatures in a fire may cause cylinders or pressure vessels to rupture and Fighters pressure relief devices to be activated (venting)

pressure relief devices to be activated (venting).

Cool cylinders and vessels exposed to fire by applying water from a protected

location and with water spray directing spray primarily onto the upper surface. Do not approach any LPG container suspected of being hot.

Hazchem Code 2YE

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#### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions,

If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Inform manufacturer / supplier of leak.

protective equipment and emergency

If safe to enter the area, wear appropriate PPE as detailed in Section 8 of the SDS. Carefully move the cylinder to a well ventilated remote area, then allow to discharge. For vessels, operate the Emergency Shutdown System (where fitted) and proceed as above.

procedures
Environmental precautions

As this product has a very low flash point, any spillage or leak is a fire and / or explosion hazard. If a leak has not ignited, stop gas flow, isolate sources of ignition and evacuate personnel.

Ensure good ventilation.

Liquid leaks generate large volumes of heavier than air flammable vapour which may travel to remote sources of ignition (e.g. along drainage systems).

Where appropriate, use water spray to disperse the gas or vapour and to protect

personnel attempting to stop leakage. Vapour may collect in any confined space.

Methods of containment and cleaning

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated. LPG is unlikely to contaminate water or soil.

#### 7. HANDLING AND STORAGE

Precautions

Avoid inhalation of vapour.

for Safe Handling Avoid contact with liquid and cold storage containers.

Avoid contact with eyes.

When handling cylinders wear protective footwear and suitable gloves. Always ensure that cylinders are within test date, are fit for use and are leak checked prior to use.

Check for leaks by sound and smell and by locating with soapy water or with approved detection devices.

Do not fill dented, gouged or rusty containers (refer AS 2337.1). Only fill cylinders to 80% fill level (ullage tube via decanting or mass via mechanical filling).

The maximum fill level for vessels is dependent upon their size and location as detailed in AS/NZS 1596.

Use only equipment and pipework designed and approved (where applicable) for LPG as applications.

Ensure that cylinders cannot be struck by vehicles or by dropped or rolled objects, etc.

Class 2.1 Flammable Gas products may only be loaded in the same vehicle or packed in the same freight container with the classes of products as permitted in the ADG Code (see references).

Cylinders shall only be transported in an upright, secure position in accordance with the National Road Transport Commission Load Restraint Guide and shall not be dropped.

Conditions for Safe Storage Store and use only in equipment / containers designed for use with this product. Store and dispense only in well ventilated areas away from heat and sources of ignition. Do not store in unventilated buildings.

Do not transport in unventilated vehicle compartments.

Do not enter storage vessels. If entry to a vessel is necessary, contact the supplier. Cylinders and vessels must be properly labelled. Do not remove warning labels. LPG cylinders shall be stored in accordance with the requirements of AS/NZS 1596 and AS 4332.

Do not store in pits and basements where vapour may collect.

Store cylinders securely in an upright position. Note: forklift cylinders may be stored horizontally.

Store away from incompatible materials, particularly oxidising agents. Check vessels and cylinders are clearly labelled.

Do not contaminate cylinders or vessels with other products.

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#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Standards** Ingredient

Name

**Occupational Exposure Limits** 

ame

LPG

TWA: 1000 ppm 8 hour(s)

**NOHSC** 

**NOHSC** 

Butane

TWA: 1900 mg/m<sup>3</sup> 8 hour(s) TWA: 800 ppm 8 hour(s)

**ACGIH TLV** 

Propane

TWA: 1000 ppm 8 hour(s)

**ACGIH TLV** 

Propene

TWA: 500 ppm 8 hour(s)

**Engineering controls** 

Avoid inhalation.

Use in well ventilated areas.

In poorly ventilated areas where flammable vapours may accumulate, mechanical explosion proof extraction ventilation is recommended. Do not enter confined areas (e.g. tanks). Contact the supplier.

PPE:

Eye & face protection

Wear safety goggles or face shield.

Skin protection

Wear impervious and insulating gloves to prevent cold burns and frostbite.

Wear coverall clothing of the anti-static, low flame spread type.

When handling cylinders, wear protective footwear.

Respiratory protection

Where an inhalation risk exists, wear a Self Contained Breathing

Apparatus or Airline Respirator.

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Director

		9. PHYS	ICAL AND CHEMI	CAL PROPERTIE	S
PROPERTY		PRO	PANE	BU <sup>-</sup>	TANE
Appearance		Colour	ess Gas	Colour	less Gas
Odour		Character	istic Odour	Character	ristic Odour
Odour Threshold		>5000 ppm		>5000 ppm	
Chemical Formula		C	sHe	c.	₄H <sub>10</sub>
Molecular Weight		4	<b>1.1</b>	5	8.1
Boiling Point		-43	2ºC	-0.	.5°C
Vapour Pressure at 40°C		1530 kF	a (max)	520 kF	a (max)
	Liq 1	uid at 5ºC	Gas at 101 kPa & 15 <sup>0</sup> C	Liquid at 15ºC	Gas at 101 kPa & 15ºC
Density (kg/m³)	5	510	1.86	568	2.47
Relative Density: water = 1.0 air = 1.0	0.	510	1.53	0.568	2.00
Litres/tonne m³/tonne m³/m³ of liquid	1.	961 961 000	536000 536 274	1760 1.760 1.000	405000 405 235
Specific heat of liquid (kJ/kg/°C)	2.	512		2.386	
Latent heat of vapourisation (MJ/m³) (MJ/kg = GJ/t)		32 358		239 0.372	
Heat combustion (MJ/m³) (MJ/kg = GJ/t)		000 0.1	93.3 50.1	28800 49.47	121.9 49.47
Volume of air (m³) needed to burn 1m³ of gas			23.7		31.0
Flash point Auto-ignition temp.			-104°C 493-549°C		-60°C 482-538°C
Max. flame temp.			1970°C		1990ºC
Flammability		emely	Extremely	Extremely	Extremely
Limits of flammability in air (% by vol):	πami	mable	flammable	flammable	flammable
upper % lower %			9.6 2.4		8.6 1.9
Other Properties:	5	Solubility (wa	ter): 0.07cm <sup>3</sup> / cm <sup>3</sup>		
Other name/numbers: LPG	l	JN 1075			
Propan	e L	JN 1978			
Butane	ι	JN 1011			
IsoButa	ne L	JN 1969			

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#### 10. STABILITY AND REACTIVITY

Reactivity Extremely flammable.

Reacts violently with oxidising agents.

Chemical stability

Stable under recommended conditions of storage.

Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

Incompatible materials

Incompatible with oxidising agents, acids, heat and ignition sources. Do not use natural rubber flexible hoses. Also incompatible (potentially

violently) with oxygen, halogens and metal halides.

Hazardous decomposition products

Heating to decomposition produces acrid smoke and irritating fumes.

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity** Non toxic.

Skin corrosion/irritation

Non irritating. Contact with evaporating liquid or supercold vessels or pipes

may result in frost-bite with severe tissue damage.

Serious eye damage/irritation Non irritating. Direct contact with evaporating liquid may result in severe

cold burns with possible permanent damage.

Respiratory or skin

Not classified as causing skin or respiratory sensitisation.

sensitisation Germ cell mutagenicity

Not classified as a mutagen.

Carcinogenicity

Not classified as a carcinogen.

Reproductive toxicity

Not classified as a reproductive toxin.

Specific Target Organ Toxicity (STOT) - single

Asphyxiant gas. Symptoms of exposure are directly related to

displacement of oxygen from air. Low vapour concentrations may cause

nausea, dizziness, headaches and drowsiness. High vapour exposure

concentrations may produce symptoms of oxygen deficiency which. coupled with central nervous system depression, may lead to rapid loss of consciousness, asphyxiation and fatal arrhythmia. May have a narcotic

effect if high concentrations of vapour are inhaled.

Specific Target Organ Toxicity (STOT) -

multiple exposure

Not classified as causing organ effects from repeated exposure.

Aspiration hazard Not classified as an aspiration hazard.

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#### 12. ECOLOGICAL INFORMATION

**Eco Toxicity** Not toxic to flora, fauna or soil organisms.

Will not cause long term adverse effects in the environment and is not

dangerous to the ozone layer.

Persistence / Degradability

Unlikely to cause long term adverse effects in the environment.

**Bio-accumulative** 

potential

This material is not expected to bio-accumulate.

**Mobility** Spillages are unlikely to penetrate the soil.

The product is likely to volatise rapidly into the air.

Other Ecological Information

Unlikely to cause long term effects in the aquatic environment.

#### 13 DISPOSAL CONSIDERATIONS

Cylinders should be returned to the manufacturer or supplier for disposal. Disposal methods

Empty cylinders or vessels may contain some remaining product.

Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed. LPG cylinders or vessels should never be inadvertently disposed of in any land fill facility without being rendered visually and physically unusable before disposal.

Warning: 'empty' containers can sometimes retain residue (liquid and / or vapour) and can be dangerous.

DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS AND OTHER SOURCES OF IGNITION THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean.

#### 14 TRANSPORT INFORMATION

**UN Number** 1075

**Proper Shipping Name** PETROLEUM GASES, LIQUEFIED

**Transport Hazard Class** 2.1

> None Allocated Packing Group

Subsidiary Risk(s) None Allocated

**Environmental hazards** 

for Transport Purposes

Special precautions for Do not transport with dangerous goods of Class 1, 3, 4, 5 and 7. Refer to

ADG Code for detailed and specific restrictions.

Transport of LPG is controlled in accordance with the requirements of the Additional information

ADG Code and the National Transport Commission Load Restraint Guide.

Hazchem Code See Section 5

#### 15. REGULATORY INFORMATION

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

A poison schedule number has not been allocated to this product using the criteria in the Poison

Schedule Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

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#### 16. OTHER INFORMATION

#### **Principal Retail Centres**

NSW 22 Holbeche Road

Blacktown NSW 2148

Phone: (02) 9672 0777

Fax: (02) 9672 1481

VIC Mulgrave

331-347 Police Road Mulgrave VIC 3170

Phone: (03) 9767 7222 Fax: (03) 9767 7372

QLD Brisbane Tanker Street

Lytton QLD 4178 Phone: (07) 3396 2769

Fax: (07) 3893 1495

SA Adelaide

1 Newfield Road

Para Hills West SA 5096 Phone: (08) 8368 4700 Fax: (08) 8349 4624

**ACT Canberra** 

3-5 Geelong Street

Fyshwick ACT 2609 Phone: (02) 6280 6355 Fax: (02) 6280 4217

Swap 'n' Go

Contact the principal retail centre in your

state or territory

**WA Perth** 

Unit 9 Level 1, 50

William St

Beckenham WA 6107 Phone: (08) 6258 9900 Fax: (08) 9351 8888

**Stargas** 

Contact the principal retail centre in your

state or territory

**NT Darwin** 

1227 Winnellie Road Winnellie NT 0821 Phone: (08) 8947 4256

Abbreviations ACGIH = American Conference of Governmental Industrial Hygienists

ADG Code = Australian Code for the Transport of Dangerous Goods by Road and

Rail

CAS Number = Chemical Abstracts Service Registry Number

GHS = Globally Harmonised System of Classifying and Labelling of Chemicals

(published by the United Nations)

HAZCHEM Code = Emergency action code of numbers and letters which gives

information to emergency services

NOHSC = National Occupational Health & Safety Commission, Australia

ppm = Parts Per Million

SDS = Safety Data Sheet

TLV = Threshold Limit Value

TWA = Time Weighted Average

STEL = Short-Term Exposure Limit

UN Number = United Nations Number, a four digit number assigned by the United

Nations Committee of Experts on the Transport of Dangerous Goods

Revision

October 2016 - Full review for compliance to GHS and the Safe Work Australia

SDS Code of Practice 2011. history

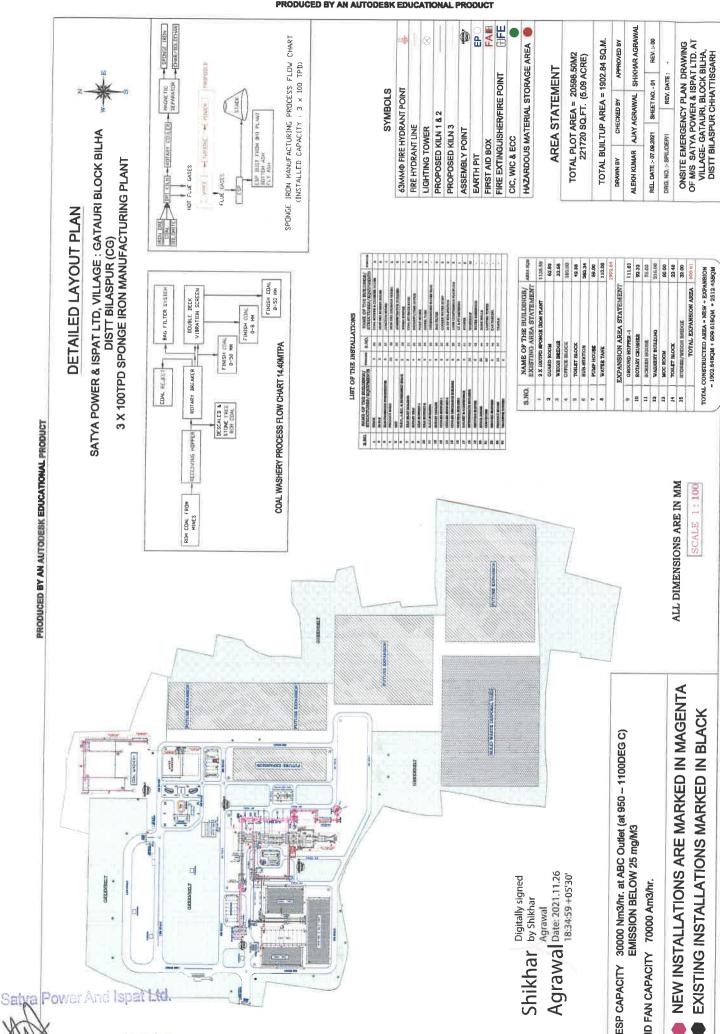
er And Isp**at Ltd.** 

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## **ANNEXURE-5** LAYOUT PLAN WITH EMERGENCY FACILITIES

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Director



Director

TOTAL CONSTRUCTED AREA = NEW + EXPANSION = 1902.848QM + 609.618QM = 2512.458QM

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

SCALE 1: 100

**EXISTING INSTALLATIONS MARKED IN BLACK** 

## CHARTER ON CORPORATE RESPONSIBILITY FOR ENVIRONMENTAL PROTECTION (CREP): INTEGRATED IRON & STEEL INDUSTRY

The Charter on Corporate Responsibility (CREP) as laid down by Central Pollution Control Board (CPCB) for Iron and Steel Industry will guide the production in the proposed expansion project. Management Initiatives for Charter of Corporate Responsibility of the points applicable for the industry are as follows:

S. No.	CREP Conditions	Compliance
1	Coke oven Plant  To meet the parameters PLD (% leaking colours), PLL (% leakinglids), PLO (% leaking off take), of the notified standards under EPA within three years by December 2005). Industry will submit time bound action plan and PER Chart along with the Bank Guarantee for the implementation or the time. To rebuild at least 40% of the coke ovenbatteries in next 10 years (by December 2012.)	At present, only DRI Plant (3x100 TPD) is running and existing coal washery is not operational. Hence, it is not applicable.
2	Steel Melting Shop Fugitive emissions – To reduce 30% by March 2004 and 100% by March 2008 (Including installation of secondary dedusting facilities).	At present, only DRI Plant (3x100 TPD) is running and existing coal washery is not operational. Hence, it is not applicable.
3	Blast Furnace Direct inject of reducing agents by June 2013	At present, only DRI Plant (3x100 TPD) is running and existing coal washery is not operational. Hence, it is not applicable.
4	Solid waste/Hazardous waste management Utilization of Steel/ Melting shop (SMS)/ Blast furnace (BF) slag as per the following schedule –  By 2004 – 70%  By 2006 – 80%  By 2007 – 100%	<ul> <li>At present, only DRI Plant (3x100 TPD) is running and existing coal washery is not operational.</li> <li>Following are the waste utilization disposal methods being adopted:</li> <li>Dust from APC devices is being used for lowlying land filling in nearby villages.</li> <li>Dolochar from DRI Plants is being sent to nearby FBC power plants &amp; other units for reuse as raw material.</li> <li>Kiln Accretion Slag &amp; Wet Scrapper Slag is being sent to Road Contractor for road construction.</li> </ul>
	Hazardous Wastes Charge of tar sludge/ETP sludge to Coke Oven by June 2003.	At present, only DRI Plant (3x100 TPD) is running and existing coal washery is not operational.

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S.	CREP Conditions	Compliance
No.	Inventorization of the Hazardous waste as per Hazardous Waste (M & H) Rules, 1989 as amended in 2000 and implementation of the Rules by Dec. 2003. (tar sludge, acid sludge, waste Lubricating Oil and type fuel falls in the category of Hazardous waste).	Waste Authorization certificate has been
5	Water Conservation/Water Pollution To reduce specific water consumption to 5 cu.m/T of long products and 8 cu.m/T for flat products by Dec 2005	The specific water consumption is maintained as per the norms.
	To operate CO-BP effluent treatment plant efficiently to achieve the notified effluent discharge standards.	Not applicable.
6	Installations of continuous stack monitoring system & its calibration in major stack and setting up of the online ambient air quality monitoring stations by June 2005.	Continuous stack emission monitoring system and online ambient air quality monitoring stations have been installed in the plant.
7	To operate the existing pollution control equipment efficiently and to keep proper record of run hours, failure time and efficiency with immediate effect. Compliance report in this regard be submitted to CPCB/ SPCB every three months.	For existing DRI Kiln, the industry has installed Electrostatic Precipitator (ESP) for emission control and is maintaining SPM levels below 50 mg/Nm³. Continuous Stack Emission Monitoring System has already been installed.
8	To implement the recommendations of Life Cycle Assessment (LCA) study sponsored by MOEF by Dec 2003	The industry will implement any such recommendation by MoEF&CC based on LCA study.
9	The industry will initiate the steps to ado improve the performance of industry towards	pt the following clean technologies measures to rds production, energy and environment.
	Energy recovery of top BF gas.	Not Applicable
	Use of tar-free runner lining.	Not Applicable
	De-dusting of cast house at top holes, runners, skimmers ladles & charging points.	



S. No.	CREP Conditions	Compliance
	Suppression of fugitive emission using nitrogen gas or other inert gas.	Suppression of fugitive emissions are being done by adopting following methods:  Approx. 33% of total plant area has been maintained as green area.  Green belt is being maintained at all boundaries of the plant  Regular water sprinkling is being carried out in the plant at suitable interval.  The raw material handling section is being provided with dust suppression (DS) by water sprinkling at open stockyard.  All discharge points and feed points, wherever the possibility of dust generation, water sprinkling is being done regularly.  Transportation of raw material and products are is being done with covered vehicles.
	To study the possibility of slag & fly ash transportation back to the abandoned mines, to fill up the cavities through empty railway wagons while they return back to the mines and its implementation.	Not Applicable.
	Processing of the waste containing flux & ferrous wastes through waste recycling Plant.	Not Applicable.
	To implement rainwater harvesting.	The industry is being/will be practicing maximum storage of rainwater and reuse stored rainwater within plant activities.
	Reduction of Green House Gases by -	
	Reduction in power consumption	The company shall propose Waste Heat
	Use of by-product gases for power generation	Recovery Boiler (WHRB) with DRI that will utilize hot flue gases from Sponge Iron Plant (DRI Kiln) to generate electricity. It would
	Promotion of energy optimization technology including energy audit.	result in energy conservation and reduction on emissions.
	To set targets for Resource Conservation such as raw material, energy & water consumption to match international standards	The company has taken up eco- friendly (i. e. 3 R's, Reduce, Recycle & Reuse) philosophy for day-to-day plant operations.

S. No.	CREP Conditions	Compliance
		All possible effort being made to conserve the raw materials, energy, and water resources.
	Up-gradation in the monitoring and analysis facilities for air & water pollutants. Also, to impart training to the manpower so that realistic data is obtained in the environment monitoring laboratories.	A separate Environment Management Cell is already in operational to manage all the environmental issues and regular monitoring being done to address the environmental concerns. Online monitoring system is provided at major stacks.
	To improve overall housekeeping	The industry has adopted appropriate housekeeping & adequate occupational health programmes within the premises.  • Regular sweeping of road and buildings is being done.  • Regular water sprinkling in dust prone area is in practice.  • Good greenbelt is provided all around the plant.
10.	Sponge iron plants Inventorization of sponge iron plants to be completed by SPCBs/ CPCB and units will be asked to install proper air pollution control equipment to control primary and secondary emissions.	For existing DRI Kiln, the industry has installed Electrostatic Precipitator (ESP) for emission control and is maintaining SPM levels below 50 mg/Nm³. Continuous Stack Emission Monitoring System has already been installed.



Photographs of the CSR Activities Carried Out from October, 2023 to March, 2024



Satya Power And Ispat Ltd.

Director



# कार्यालय ग्राम पंचायत कछार

जपनद पंचायत-बिल्हा,जिला-बिलासपुर(छ.ग.)

सर्पंच त्रिवेणी मरकाम

सी. 7389465474

उपसरपंच

अंकित बघेल

मी. 7987635791

## पंचगण

- (1) सागर पटेल
- (2) भगवती केंवट
- (3) शिवकुमारी पटेल
- (4) वीरेन्द्र साह
- (5) संतोषी पटेल
- (6) दिलीप पटेल
- (7) बैसाखु पटेल
- (8) पूजा यादव
- (9) सती खाण्डे
- (10) किर्तन कुर्रे
- (11) साहेब लाल कुर्रे
- (12) जतन क्रॅ
- (13) पार्वती यादव
- (14) सीमा यादव
- (15) शीतल बंजारे
- (16) मनहरण मरावी
- (17) कुंजन मरावी
- (18) उषा निर्मल सिंह
- (19) महेन्द्र बंजारे

To the second

दिनांक 15.04.2024

स्वा पाकर ए॰ इत्यात विषये पता निषय तत भी आर. जावा विषये रेड किलामुम के द्वारा हमारे गाया पंचायत किलार आहित अभा अधारा में वर्ष २०२३ -२५ में ठाम डामर्स्स का कार्य गा. पुर्व मा: याला में सर्स्स का कार्य

इस कार्य के लिए कार्य पंचायत स्वार के द्वारा कंपनी के चार्य अहती जाता है जवा कंपनी के उद्धारन अविषय की क्रामां। कर्ते हैं।

निर्वा वार्थ काय

ग्राम पंचायत- कछार उ. - बिन्हा, बिलासपुर (छ ग.)

Salva Rower And Ispat Ltd.



## GATIH LABORATORIES (OPC) PVT. LTD.

Bungatos No.3, Balap Creen City, Sondongri, Raipur Chhattisgarh, INDIA 492099
Ph. No.5771 4332 IO2, Mo. 491 9818446188 | curail: aunti-chaudravanshra/gattheousultauxx.com

## TEST REPORT

	AMBIENT N	DISE REPORT		
Name & Address of the Cur	stomer	<b>Report No.:</b> GLPL/24-25/68		
To,		<b>Dispatch No:</b> 100224107		
M/s Satya Power and Ispa	it Ltd.	<b>Issue Date:</b> 12/02/2024		
Address: Gatauri, Ratanp	our Road, Bilaspur 495006	Client Ref: xxx		
Chhattisgarh India.		Date: xxx		
Sampling Location Near Main Gate		Date of monitoring	: 08/02/2024 to 09/02/2024 : 10/02/2024	
Sampling Protocol	Sampling Protocol : Ambient Noise Level			
Sub Group	: Atmospheric Pollution	Period of Testing	: 10/02/2024 to 12/02/2024	
Instrument ID	GATIHSLM2311	Sample ID	: GLPL0224AN68	
-	T. L. 4:17		: Gatih Laboratories (OPC)	
Zone Industrial Zone		Sample collected by	Pvt. Ltd.	
<b>Environment Condition</b> : As per sampling Protocol		Method of sampling	: IS-9989	
Other information (If				
any)	3			

#### \*Day Time

Location of Sample - Near Main Gate						
S. No.	Parameter	Unit	Method Used	Observed Value	Limit As Per CPCB Norms	
I,	Ambient Noise Level	dB(A)	: IS-9989-1981	63.60	75	

## \*\*Night Time

	Location of Sample - Near Main Gate						
S. No.	Parameter	Unit	Method Used	Observed Value	Limit As Per CPCB Norms		
1,	Ambient Noise Level	dB(A)	: IS-9989-1981	52.20	70		

Note: \*Day Time mean 6.am to 10 pm,

\*\*Night Time mean 10.p.m to 6 am

Note: 1) The results relate only to the items sampled and tested.

2) Sample will be destroyed after 30 days from the report date unless otherwise specified.

3) The report shall not be reproduced except in full without approval of the laboratory.

4) Gatih Laboratories (OPC) Pvt. Ltd. is not responsible for the authenticity of the sample collected by other

\*\*\*End of Reports\*\*\*

Environmental Laboratories.

Authorized Signatory

Mr. Goukaran Sahu

Page Noa 940 Poliver And Ispat Ltd.



## GATIH LABORATORIES (OPC) PVT. LTD.

Bungsluss No.1, Buluii Green City, Sondongri, Raipur Chhattisearti, INDLA 492099 Ph. No.2774 1533302, Mai #01/9818446188 | email: amitechandriz aushri a gathheonsubaury etou

## **TEST REPORT**

	AMBIENT N	OISE REPORT		
Name & Address of the Cu	stomer	<b>Report No.:</b> GLPL/24-25/70		
To,		<b>Dispatch No:</b> 100224107		
M/s Satya Power and Ispa	at Ltd.	Issue Date: 12/02/2024		
Address: Gatauri, Ratanj	our Road, Bilaspur 495006	Client Ref: xxx		
Chhattisgarh India.		Date: xxx		
Sampling Location	: Near Labour Colony	Near Labour Colony Date of monitoring		
Sampling Protocol	: Ambient Noise Level	Date of Sample Received	: 10/02/2024	
Sub Group	: Atmospheric Pollution	Period of Testing	: 10/02/2024 to 12/02/2024	
Instrument ID	GATIHSLM2313	Sample ID	: GLPL0224AN70	
7	Industrial Zene	6	: Gatih Laboratories (OPC)	
Zone : Industrial Zone		Sample collected by	Pvt. Ltd.	
<b>Environment Condition</b>	: As per sampling Protocol	Method of sampling	: IS-9989	
Other information (If				
any)				

## \*Day Time

Location of Sample - Near Labour Colony						
S. No.	Parameter	Unit	Method Used	Observed Value	Limit As Per CPCB Norms	
1.	Ambient Noise Level	dB(A)	: IS-9989-1981	61.30	75	

## \*\*Night Time

	Location of Sample - Near Labour Colony					
S. No.	Parameter	Unit	Method Used	Observed Value	Limit As Per CPCB Norms	
1.	Ambient Noise Level	dB(A)	: IS-9989-1981	53.10	70	

Note: \*Day Time mean 6.am to 10 pm,

\*\*Night Time mean 10.p.m to 6 am

Note: 1) The results relate only to the items sampled and tested.

2) Sample will be destroyed after 30 days from the report date unless otherwise specified.

3) The report shall not be reproduced except in full without approval of the laboratory.

4) Gatih Laboratories (OPC) Pvt. Ltd. is not responsible for the authenticity of the sample collected by other

\*\*\*End of Reports\*\*\*

Environmental Laboratories.

Authorized Signatory

Mr. Goukaran Sahu

Page No: 01 of 01

ower And Ispat Ltd.



## GATIH LABORATORIES (OPC) PVT. LTD.

Bringalios Ng.1, Baliap Green Ciry, Sondonyri, Raipar Chhattisgarth, INDLY 492099 Ph. No.8771 4332302, Mor. 493 9818446188 Songal Smith Chandray anshi a gatificonsultance com

## TEST REPORT

	AMBIENT N	DISE REPORT		
Name & Address of the Customer		<b>Report No.:</b> GLPL/24-25/69		
To,		<b>Dispatch No:</b> 100224107		
M/s Satya Power and Ispat Ltd. Address: Gatauri, Ratanpur Road, Bilaspur 495006		Issue Date: 12/02/2024 Client Ref: xxx		
Sampling Location	: Near Admin Building	Date of monitoring	: 08/02/2024 to 09/02/2024	
Sampling Protocol	: Ambient Noise Level	Date of Sample Received	: 10/02/2024	
Sub Group	Atmospheric Pollution	Period of Testing	: 10/02/2024 to 12/02/2024	
Instrument ID	GATIHSLM2312	Sample ID	: GLPL0224AN69	
77	Industrial Zone	Samula collected by	: Gatih Laboratories (OPC)	
Zone	industrial Zone	Sample collected by	Pvt. Ltd.	
<b>Environment Condition</b>	: As per sampling Protocol	Method of sampling	: IS-9989	
Other information (If any)				

#### \*Day Time

Location of Sample - Near Admin Building					
S. No.	Parameter	Unit	Method Used	Observed Value	Limit As Per CPCB Norms
L	Ambient Noise Level	dB(A)	: IS-9989-1981	56.10	75

### \*\*Night Time

		Location of	Sample – Near Adn	nin Building	
S. No.	Parameter	Unit	Method Used	Observed Value	Limit As Per CPCB Norms
1.	Ambient Noise Level	dB(A)	: IS-9989-1981	46.30	70

Note: \*Day Time mean 6.am to 10 pm,

\*\*Night Time mean 10.p.m to 6 am

Note: 1) The results relate only to the items sampled and tested.

2) Sample will be destroyed after 30 days from the report date unless otherwise specified.

3) The report shall not be reproduced except in full without approval of the laboratory.

4) Gatih Laboratories (OPC) Pvt. Ltd. is not responsible for the authenticity of the sample collected by other

\*\*\*End of Reports\*\*\*

Environmental Laboratories.

Authorized Signatory

Mr. Goukaran Sahu

Page No: 01 of 01

Satya Power/And Ispat Ltd.

Name of EmpCHANDRA PRAKAS	H Father					
DOB Age35 Yrs Sex M	ALE Deptt					
P.No	Date Of PME 12-04-2024					
Annexure						
PRE-EMPLOYMENT & PERIODIC	MEDICAL EXAMINATION					
(1) GENERAL EXAMINATION:						
HEIGHT: _ NA CM, WEIGHT:NA	KG BMI: NA					
CHEST: INSPIRATION NA CM, EX	PIRATION: NA CM					
BUILD - AVERAGE	morrion.					
THROAT TONGUE	TONSILS					
TEETH GUMS	THYPOID					
LYMPH NODESNA	THE TOTAL OF THE T					
ADDITIONAL FINDINGSNO						
(2) CARDIO-VASCULAR SYSTEM:						
PULSE: REGULAR PERIPHERAL PU	II SF - FFI T					
B.P. mm of Hg.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
HEART SOUND:	RMAI					
HEART SOUND:  MURMUR, IF ANY:  ADDITIONAL FINDINGS (S), IF ANY	NO					
ADDITIONAL FINDINGS (S), IF ANY	ND					
(3) RESPIRATORY SYSTEM:						
SHAPE OF CHEST: NO	MAL_					
CHEST MOVEMENTS: NO	RMAL					
TRACHEA:NOR	RMA L					
BREATH SOUNDS: NO	2 MAL					
(4) GASTRO-INTESTINAL SYSTEM:						
LIVER:NORMALSPL	EEN: NARMAL					
ANY ABDOMINAL LUMPS:	100					
EXAMINATION OF EYES:						
EXTERNAL EXAMNORMAL	SQUINT: NA					
	A					
COLOUR VISION – NORMAL						
FUNDUS (L) (R)	*					
INDIVIDUAL COLOUR IDENTIFICATION – NO	RMAL					
DISTANT VISION (WITHOUT GLASSES)						
RIGHT NA LEFT	NA					
(WITH GLASSES) RIGHT NA	LEFT NA					
NEAR VISION (WITHOUT GLASSES)						
RIGHT NA I FFT	MA					

Satya Power And Ispat Ltd.

	. 7
	(WITH GLASSES) RIGHT  NIGHT BLINDNESS: (NYCTALOPIA):  UORMAL
(5)	EXAMINATION OF EAR, NOSE & THROAT:  EXTERNAL EXAM:  OFFICE
(6)	GENITO URINARY SYSTEM:  HERNIA:  CRYPTORCHIDISM  PHIMOSIS  VARICOSE VEINS  SIGNS OF STD  OTHER EXAMINATION FOR FEMALES:  MENSTRUAL HISTIRY OBSTETRICHISTORY  MENARCHE AT  VIS. GRAVIDA  LMP-  MENSTRUAL IRREGULARITY, IF ANY
IN	VESTIGATION
(7)	LAB INVESTIGATION:  URINE: ALBUMIN
	STOOL: Pus Cell RBC Epithelial Cell
	HAEMOGRAM Blood Group: 6" Rh factor: POSITIVE Hb 14 8 gm/dl TLC 7 59 /cmm RBC \$ 8 mil/cmm  DLC - Poly \$5 % Lym \$6 % Esino 6 % Mono 8 %  Beso 00 PlateletsCount \$60 taklis/cmm
	LIPID PROFILE  Serum cholesterol: 10 mg/dl S/Triglycerides: 10 mg/dl mg/dl HDL: 80 mg/dl mg/dl
	HEPATIC PROFILE SGPT: 18 IU/L SGOT: 19 IU/L Alkaline Phosphatase: 70 IU/L
	RENAL PROFILE  Blood Urea: 9 mg/dl S/Creatinine: 0 89 mg/dl mg/dl
]	METABOLIC Blood Sugar – F: 85 mg/dl Blood Sugar – PP: 55, mg/dl S/uric acid:4 8 gm/dl

Satya Power And spat Ltd.

Director

(8) OTHER INVESTIGATION:		
X-Ray Chest (In normal persons once in t	hree years,	
MANAI		
in case of any abnormality x-ray c ECG (in case of any abnormality further)	ests should be carried o	ort)
Ultra Sound Whole abdomen (In normal p		,
can be done at shorter intervals)	persons once in three yo	ears in case of any abnormality
Others: MORMAL _	_	
(9) PULMONARY FUNCTION TEST:		
FVC	PDV 1	CEVU PVO
Predicted 1.2.4	FEV 1	FEVI/FVC
Measured 2 VI	0.01	1-26/2-27
% of Predicated	7. 2	3.14/2.21
Remarks: : SPIROMETRY WITHIN I	NORMAL LINET	1487. /37%
(10) Audiometry examination – PTA of	of both some at Fraguesia	- £135 250 500 1000 2000
4000, 8000 Cycles per second	or both ears at frequency	y of 125,250,500, 1000, 2000,
, , , , , , , , , , , , , , , , , , ,		
PTA(dB HL)		
RIGHT EAR NORMAL		
LEFT EAR NORMAL		
PROVISIONAL DIAGNOSIS – B/L NO	RMAL HEARING SE	NSITIVITY
(12) Medical examination of canteen sta	ec.	
		routine blood examination.
f - Stool and urine exam	ination for worm infect	routine blood examination.
	seases (scables and other	
h- X-ray and other tests	for T R	rs)
22 July mid office tests	TOT T.D.	
(13) Details of other specific medical examina schedules of rule 107 of C.G. factories rule	ation carried out as m es 1962 –	nentioned in the respective
		Signature (with date) of Factory Medical Officer
	90	Signature (with date) of certifying surgeon Dr. H. SARAF
Rower And Ispat Ltd.		CGMC Reg.No4584

Name of En	IP-ROSHAN PATE	L Fat	her	
DOB	Agezz Yrs S	Sex MALE Dej	ptt	
P.No		Dat	e Of PME \	2-04-20
	<u>An</u>	nexure		
PRE-EN	PLOYMENT & PERI	ODIC MEDICA	L EXAMINAT	ION
(1) GENERAL EXA	MINATION:			
	CM, WEIGHT:	NA KG	BMI: NA	
CHEST: INSPIRA	ATIONNA	M EXPIRATIO	N. NA	CM.
BUILD - AVERA	\GE	,, 2, ti 110 ti 10		
THROAT	TONGUE	TONS	SILS =	
TEETH	GUMS	TUVI	OID	
LYMPH NODES	AM	* /   *	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
ADDITIONAL FI	NDINGS NO			
(2) CARDIO-VASCI				
	REGULAR PERIPHEI	RAL PULSE – F	ELT	
B.P. i mi	<del></del>			
HEART SOUND:		_ HORMAL		
MURMUR, IF AN	IY:	NA _		
ADDITIONAL FI	NDINGS (S), IF ANY	NO		
(3) RESPIRATORY	SYSTEM-			
	T:	NORMAL		
CHEST MOVEME	ENTS:	THO WIND		
TRACHEA:		NARMAI		
BREATH SOUND	S:	MADMAI		
		_ HORI III		
(4) GASTRO-INTES				
LIVER:	NORMAL	SPLEEN:	MORME	<del>+</del> L
ANY ABDOMINA	L LUMPS:	NO		
EXAMINATION	OF EYES:			
	MNORMAL			
NYSTAGMUS:		HA_		
COLOUR VISION	- NORMAL			
FUNDUS (L) (R)				
INDIVIDUAL COL	OUR IDENTIFICATIO	N-NORMAL		
	(WITHOUT GLASSES)	r e e e e e e e e e e e e e e e e e e e		
RIGHT	ALEFT	NA		
(WITH GLASSES)	RIGHT NA	LEFT_	NA	
	THOUT GLASSES)			
DICUT	A A	T TOTAL	ALA	

Satya Power Antilspat Ltd.
Director

(WITH GLASSES) RIGHT NIGHT BLINDNESS: (NYCTALOPIA): NO FMAL
NIGHT BLINDNESS: (NYCTALOPIA): NOFMAL
(5) EXAMINATION OF EAR, NOSE & THROAT:  EXTERNAL EXAM:
HERNIA: HYDROCELE/VARICOCELE CRYPTORCHIDISM PHIMOSIS VARICOSE VEINS SIGNS OF STD OTHER EXAMINATION FOR FEMALES: MENSTRUAL HISTIRY OBSTETRICHISTORY MENARCHE AT Yrs. GRAVIDA LMP - COMMENSTRUAL IRREGULARITY, IF ANY
INVESTIGATION
URINE: ALBUMIN SUGAR NI Epithelial Cell 3-5 Beateria Crystals NI Casts
STOOL: Pus Cell RBC Epithelial Cell
HAEMOGRAM Blood Group: B' Rh factor: POSITNE Hb 15-1 gm/dl TLC 5-49/cmm RBC 4-5 mil/cmm DLC - Poly 70 % Lym 30 % Esino 8 % Mono 8 % Beso 00 Platelets Count 410 lakhs/cmm
LIPID PROFILE  Serum cholesterol: 130 mg/dl S/Triglycerides: 100 mg/dl mg/dl HDL: 10 mg/dl mg/dl
HEPATIC PROFILE SGPT: \\ \frac{1}{7}  \text{IU/L}  \text{SGOT: \\ \frac{1}{8}  \text{IU/L}  \text{IU/L}  \text{IU/L}
RENAL PROFILE  Blood Urea: 11 mg/dl S/Creatinine: 0 19 mg/dl mg/dl
METABOLIC Blood Sugar - F: 86 mg/dl Blood Sugar - PP: 3 8 mg/dl S/uric acid: 5.2 mg/dl Blood Sugar - PP: 3 8 mg/dl

Satya Pover And Ispat Ltd.

Director

(8) OTHER INVEST							
X-Ray Chest (In t	normal persons once in thr	ee years.					
	HORMAL						
in case of	in case of any abnormality x-ray can be done at shorter intervals)						
ecu (in ease of a	ny aonormanty turtner tes	ts should be carried ou	1)				
Ultra Sound Who	NORMAL_	1 4	ars in case of any abnormality				
can be done at she	rter intervale)	rsons once in three year	irs in case of any approximatity				
Others:	NORMAL -						
.6.							
(9) PULMONARY	FUNCTION TEST:						
	FVC	FEV 1	FEVI/FVC				
Predicted	3.52	1.11	3.52/1.11				
Measured	1.84	3.43	1.89/3.43				
% of Predicated	\$ 5.5%	41%	551.141%				
	ROMETRY WITHIN NO						
(10) Audiomet	ry examination – PTA of	both ears at frequency	of 125,250,500, 1000, 2000,				
4000, 8000 Cycle	s per second						
	PTA(dB HL)						
RIGHT EA							
LEFT EAR	NORMAL						
	HUNING						
PROVISIONAL	DIAGNOSIS – B/L NOF	RMAL HEARING SEN	SITIVITY				
(12) Medical exa	mination of canteen staff						
e –			outine blood examination.				
f -	Stool and urine examin		140				
g-	Screening for skin dise		rs)				
h-	X-ray and other tests for	or T.B.					
(17) Datails of other s	pacific medical exemina	tion garried out as mu	ontional in the secondary				
schedules of rule 1	107 of C.G. factories rule	iion chrried que as m • 1962 –	entioned in the respective				
schedules of fale f		3 1702 -					
	*******************						
			Signature (with date) of				
			Factory Medical Officer				
			1				
			()				
			Signature (with date) of				
			cerklying surgeon				
			Morathology				
			CGMC Reg.No4584				

Satya Power And Ispai Ltd.

Name of EmpASHISH K	U. KASHYAP Father
DOB Age23	Yrs Sex MALE Deptt
P.No	Date Of PME 12-04-2024
	Annexure
PRE-EMPLOYMENT &	PERIODIC MEDICAL EXAMINATION
(1) GENERAL EXAMINATION:  HEIGHT: CM, WEIG  CHEST: INSPIRATION (1)  BUILD - AVERAGE  THROAT TONGUL  TEETH GUMS  LYMPH NODES (2) CARDIO-VASCULAR SYSTEM:  PULSE: REGULAR PER	CM, EXPIRATION: NR CM.  E TONSILS THYROID
B.P.   mm of Hg.	- 0 m# 1
HEART SOUND:	NORMIL
MURMUR, IF ANY:	NHNH
ADDITIONAL FINDINGS (S), IF A	NORMAL NA NY-NA
(3) RESPIRATORY SYSTEM: SHAPE OF CHEST: CHEST MOVEMENTS: TRACHEA: BREATH SOUNDS:	NORMAL NORMAL NORMAL NORMAL
(4) GASTRO-INTESTINAL SYSTEM LIVER: NO FINE CONTROL SYSTEM ANY ABDOMINAL LUMPS: EXAMINATION OF EYES: EXTERNAL EXAM NYSTAGMUS:	SPLEEN: NA
COLOUR VISION – NORMAL FUNDUS (L) (R) INDIVIDUAL COLOUR IDENTIFICA	ATION – NORMAL
NEAR VISION (WITHOUT GLASSES	LEFT NA
RIGHT NA	LEFT

(WITH GLASSES) RIGHT					
(5) EXAMINATION OF EAR, NOSE & THROAT: EXTERNAL EXAM: N O PROPERTY OF THE PROPERTY OF					
(6) GENITO URINARY SYSTEM:  HERNIA: NO POR HYDROCELE/VARICOCELE					
INVESTIGATION					
(7) LAB INVESTIGATION:  URINE: ALBUMIN , SUGAR					
STOOL: Pus Cell RBC Epithelial Cell					
HAEMOGRAM Blood Group: P Rh factor: POSITNE Hb   6.0 gm/dl TLC7 S /cmm RBC 4. 5 mil/cmm DLC - Poly 60 % Lym30 % Esino 4 % Mono 6 % Beso 00 Platelets Count lakhs/cmm					
LIPID PROFILE  Serum cholesterol: mg/dl S/Triglycerides: mg/dl  HDL: mg/dl LDL: mg/dl					
HEPATIC PROFILE SGPT: 2 IU/L SGOT: 25 IU/L Alkaline Phosphatase: 63- IU/L					
RENAL PROFILE  Blood Urea: 13 mg/dl S/Creatinine: 0.69 mg/dl mg/dl					
METABOLIC Blood Sugar - F: 2 mg/dl Blood Sugar - PP: mg/dl slood Sugar - PP: m					

Satya Power And Ispat Ltd.

Director

(8) OTHER INVES	TIGATION:		
X-Ray Chest (In:	normal persons once in the	Par vare	
	UDBMA1	itee years,	
in case of	any abnormality y-ray on	n ha dona at alcostra la	American Lu N
ECG (in case of a	any abnormality x-ray ca	sts should be carried o	at)
	NINONAL		
Ultra Sound Who	le abdomen (In normal re	ersons once in three ve	ears in case of any abnormality
can be done at sin	rier intervals)		and in the start and abitominantly
Others:	- NORMAL -	)	
(9) PULMONARY	FUNCTION TEST:		
	FVC	FEV 1	FEVI/FVC
Predicted	1.80	2.10	1.80/2.19
Measured	4.11.	3.26	
% of Predicated	20%	35%	4:11/3:26
Remarks: SPII	ROMETRY WITHIN N	OPMAL LIMIT	20/1/35%
(10) Audiometr	y examination - PTA of	hoth ears at frequence	of 125,250,500, 1000, 2000,
4000, 8000 Cycles	per second	bout cars at treductic	01 123,230,300, 1000, 2000,
-			
r-			
	PTA(dB HL)		
RIGHT EAF	MORMAL		
LEFT EAR	MORHAL		
PROVISIONAL	DIAGNOSIS - B/L NOI	RMAL HEARING SE	VSITIVITY
(12) Medical exam	mination of canteen staf		
e –	Blood examination for	venereal disease and	routine blood examination.
f -	Stool and urine examin	nation for worm infect	ion,
g-	Screening for skin dise	ases (scabies and othe	rs)
<b>h-</b>	X-ray and other tests for	or T.B.	,
(40) D   11   0   1			
(13) Details of other s	pecific medical examina	tion carried out as m	entioned in the respective
schedules of rule 1	07 of C.G. factories rule	s 1962 <b>–</b>	•
******************	******	*******	
		******************	
			Signature (with date) of
			Factory Medical Officer
			0

Signature (with date) of Certifying surgeon M.D. Pathology
CGMC Reg.No.-4584

Satya Perfer And Ispat Ltd.

Director

Name of EmpDEVENDRA KAHAR	Father
DOB Age32 Yrs Sex MAL	
P.No	Date Of PME 12-04-2024
Annexure	
PRE-EMPLOYMENT & PERIODIC ME	DICAL EXAMINATION
(I) GENERAL EXAMINATION:  HEIGHT: NH CM, WEIGHT: NH CHEST: INSPIRATION NH CM, EXPIRE BUILD - AVERAGE THROAT TONGUE TEETH GUMS LYMPH NODES NH ADDITIONAL FINDINGS	_KG, BMI: NF _CM.
ADDITIONAL FINDINGS NO	
(2) CARDIO-VASCULAR SYSTEM:  PULSE: REGULAR PERIPHERAL PULS  B.P.   mm of Hg.  HEART SOUND: OF MURMUR, IF ANY: OF ADDITIONAL FINDINGS (S), IF ANY-	
MURMUR, IF ANY:	0
ADDITIONAL FINDINGS (S), IF ANY	10
(3) RESPIRATORY SYSTEM: SHAPE OF CHEST: CHEST MOVEMENTS: TRACHEA: BREATH SOUNDS:	nat
ANY ABDOMINAL LUMPS:	
EXAMINATION OF LYES:  EXTERNAL EXAM.  NYSTAGMUS:  COLOUR VISION – NORMAL  FUNDUS (L) (R)	SQUINT:NA
INDIVIDUAL COLOUR IDENTIFICATION – NORIDISTANT VISION (WITHOUT GLASSES) RIGHT LEFT  (WITH GLASSES) RIGHT NA LEET  NEAR VISION (WITHOUT GLASSES) RIGHT LEFT	NA NA ,
	Satya Power And Ispat Ltd.

(WITH GLASSES) RIGHT
(WITH GLASSES) RIGHT NIGHT BLINDNESS: (NYCTALOPIA):
(5) EXAMINATION OF EAR, NOSE & THROAT:  EXTERNAL EXAM: NOSE & THROAT:
(6) GENITO URINARY SYSTEM:  HERNIA:  HYDROCELE/ VARICOCELE  CRYPTORCHIDISM  VARICOSE VEINS  OTHER EXAMINATION FOR FEMALES:  MENSTRUAL HISTIRY OBSTETRICHISTORY  MENARCHE AT  VIS. GRAVIDA  MENSTRUAL IRREGULARITY, IF ANY
INVESTIGATION
(7) LAB INVESTIGATION:  URINE: ALBUMIN NIL SUGAR OIL  MICROSCOPY: Pus Cell S S RBC NIL Epithelial Cell S  Beateria NIL Crystals NIL Casts
STOOL: Pus Cell RBC Epithelial Cell
HAEMOGRAM Blood Group: "O" Rh factor: POSITIVE Hb   5.5 gm/dl TLC5.7. /cmm RBC 4.1 mil/cmm  DLC - Poly 70 % Lym 30 % Esino 61 % Mono 69 %  Beso 00 Platelets Count 315 lakhs/cmm
LIPID PROFILE  Serum cholesterol: 130 mg/dl S/Triglycerides: 100 mg/dl mg/dl HDL: 140 mg/dl mg/dl
HEPATIC PROFILE SGPT: 72 IU/L SGOT: 23 IU/L Alkaline Phosphatase: 60 IU/L
RENAL PROFILE  Blood Urea: U mg/dl S/Creatinine; 0.90 mg/dl
METABOLIC Blood Sugar – F: 79 mg/dl Blood Sugar – PP: 8 mg/dl s/wric acid: gm/dl

Salva Power And Ispat Ltd.

Director

X-Ray Chest (In 1	normal persons once in (l	ree years,			
in case of a ECG (in case of a	NDRMA Lany abnormality x-ray cany abnormality further to	m be done at shorter in	tervals) ut)		
Ultra Sound Who	le abdomen (In normal p	ersons once in three ye	ears in case of any abnormality		
Others:	-NORMAL				
(9) PULMONARY	FUNCTION TEST:				
	FVC	FEV 1	FEVI/FVC		
Predicted	4.2	2.4	4.2/2.4		
Measured Measured	3.2	513	3.2 5.3		
% of Predicated	ROMETRY WITHIN N	641.	31%/641/6		
	ry examination - PTA o		y of 125,250,500, 1000, 2000,		
	PTA(dB HL)				
RIGHT EA	R MORMAL MORMAL				
-	L DIAGNOSIS – B/L NO	DMAI UEADING SE	NOTULTV		
			MRTIIAI) I		
` '	mination of canteen sta		souting blood automination		
<ul> <li>e - Blood examination for venereal disease and routine blood examination.</li> <li>f - Stool and urine examination for worm infection.</li> </ul>					
_	g- Screening for skin diseases (scabies and others)				
h-					
			nentioned in the respective		
schedules of rule	107 of C.G. factories rul	es 1962 –			
***********************					
			Signature (with date) of Factory Medical Officer		
			<i>(</i> )		
			Signature with date) of		

Or. WSARAF
M. Patriology
CGMC Reg.No.-4584
Satya Power And Ispat Ltd.

Name of Em	P GIOPAL KRISHNA N	AAYAK Father	
DOB Age 39 Yrs Sex MALE Deptt			
P.No		Date Of PME 12-04-2024	
	Annex	ure	
PRE-EMI	LOYMENT & PERIODIC	C MEDICAL EXAMINATION	
(1) GENERAL EXAMINETED IN THE CHEST: INSPIRATED IN A VERAGE	MINATION:  CM, WEIGHT:  TION  CM, E  CM, E	KG, BMI: N P CM.	
THROAT TEETH LYMPH NODES _	TONGUE GUMS NDINGS/	TONSILS THYROID	
ADDITIONAL FIN	IDINGS		
(2) CARDIO-VASCU PULSE: B.P.   mm HEART SOUND: _ MURMUR, IF ANY	LAR SYSTEM: REGULAR PERIPHERAL I of Hg.  (:		
		ama L	
CHEST MOVEMEN	ITS:	RMAL RMAL	
TRACHEA:	N C	SEMPL	
BREATH SOUNDS:	W 2	JEMPI-	
ANY ABDOMINAL EXAMINATION OF EXTERNAL EXAM. NYSTAGMUS: COLOUR VISION— FUNDUS (L) (R) INDIVIDUAL COLO	LUMPS:SP LUMPS:SP F EYES:N D P M P NORMAL  UR IDENTIFICATION – N	SQUINT: NA CORMAL	
DISTANT VISION (V	VITHOUT GLASSES)	5 M	
RIGHT N	LEFT		
(WITH GLASSES) RIGHT LEFT LEFT NEAR VISION (WITHOUT GLASSES)			
DIATE AND			
RIGHT LEFT 1047^			

Satva Power And Ispat Ltd.

NIGHT BLINDNESS: (NYCTALOPIA):
(5) EXAMINATION OF EAR, NOSE & THROAT: EXTERNAL EXAM:
(6) GENITO URINARY SYSTEM:  HERNIA:
INVESTIGATION
(7) LAB INVESTIGATION:  URINE: ALBUMIN, SUGAR
STOOL: Pus Cell RBC Epithelial Cell
HAEMOGRAM Blood Group: A Rh factor: POSTIN (Hb 6 2 gm/dl TLC 7 5 /cmm RBC 4 5 mil/cmm  DLC - Poly 5 % Lym 3 % Esino 6 % Mono 6 %  Beso00 Platelets Count 3 10 lakhs/cmm
LIPID PROFILE  Serum cholesterol: 50 mg/dl S/Triglycerides: 120 mg/dl mg/dl LDL: mg/dl mg/dl
HEPATIC PROFILE  SGPT: 25 IU/L SGOT: 26 IU/L  Alkaline Phosphatase: 15 IU/L
RENAL PROFILE  Blood Urea: 10 mg/dl S/Creatinine: 0.76 mg/dl mg/dl
METABOLIC Blood Sugar - F: 18 mg/dl Blood Sugar - PP: 10 mg/dl mg/dl S/uric acid: 5 2 gm/dl mg/dl
Satya Power And Ispat Ltd.

(8) OTHER INVEST					
X-Ray Chest (In n	ormal persons once in th	rce years,			
in case of a	NORMAL my abnormality x-ray ca ny abnormality further te	n be done at shorter into	ervals)		
	NORMAL	sis should be carried bu	11)		
- and dotte at SHO	nervius)	ersons once in three yea	ars in case of any abnormality		
Others:	- MORMAL -				
(9) PULMONARY I	FUNCTION TEST:				
	FVC	FEV 1	FEVI/FVC		
Predicted	3.78	2.28	3-38/2.28		
Measured	2.31	1.26	2.3111.26		
% of Predicated	49%	267	49% 1251		
Remarks: : SPIR	OMETRY WITHIN N	ORMAL LIMIT	11/1-01		
(10) Audiometr	y examination - PTA of	both ears at frequency	of 125,250,500, 1000, 2000,		
4000, 8000 Cycles	per second	- vom sate at troquency	01 125,250,500, 1000, 2000,		
	•				
	PTA(dB HL)				
RIGHT EAR	MORMAL				
LEFT EAR	HORMAL				
PROVISIONAL	DIAGNOSIS – B/L NO	RMAL HEARING SEN	ISITIVITY		
(12) Medical exar	nination of canteen staf	Yr.			
(12) Medical CAM			outine blood examination.		
f-					
g-	The state of the s				
h-	X-ray and other tests f		5)		
11-	V-19 and office feets I	UI 1.D.			
(13) Details of other sp schedules of rule 10	occific medical examina 97 of C.G. factorics rule	tion carried out as m s 1962 –	entioned in the respective		
			Signature (with date) of Factory Medical Officer		
			Signature (with date) of certifying surgeon Dr. ASSARAF		
	***************************************		CGMC Rockin 4594		
			CGMC Reg.No4584		

Name of EmpMADHAV SHARMA Father	
DOB Agoza V. C	
Age37 Yrs Sex MALE Deptt	
P.No Date Of PME 12-04-20	
	124
Annexure	
PRE-EMPLOYMENT & PERIODIC MEDICAL EXAMINATION (1) GENERAL EXAMINATION	
HEIGHT: NA CM, WEIGHT: NA KG, BMI: HA	
CHEST: INSPIRATION NA CM, EXPIRATION: NA CM.	
INROAT	
TEETH GUMS TONSILS	
LYMPH NODES THYROID	
TEETH GUMS TONSILS LYMPH NODES NA THYROID ADDITIONAL FINDINGS NO	
(2) CARDIO-VASCULAR SYSTEM:	
PULSE: REGIII AR PERIPUED AT THE	
B.P. mm of Hg.	
HEART SOUND:	
MURMUR, IF ANY:	91
HEART SOUND:  MURMUR, IF ANY:  ADDITIONAL FINDINGS (S), IF ANY-  (3) RESPIRATORY SYSTEM:	-
(3) RESPIRATORY SYSTEM:	
SHAPE OF CUEST.	
SHAPE OF CHEST:  CHEST MOVEMENTS:  TRACHEA:  BREATH SOLDING:  MORMAL  MORMAL	
BREATH SOLDING NORMAL	
TRACHEA:  BREATH SOUNDS:  NORMAL  NORMAL  NORMAL	
The state of the s	
LIVER: NOPHAL	
ANY ABDOMINAL LUMPS: SPLEEN: MORNAL EXAMINATION OF EYES:	
EXTERNAL EVAN	
EXTERNAL EXAMNORMALSQUINT:NA	
NYSTAGMUS:NORMALSQUINT:NA COLOUR VISION - NORMAL	
FUNDUS (L) (R)	
INDIVIDUAL COLOUR IDENTIFICATION - NORMAL	
140111	
NEAD VISION WITH DEA	
RIGHT NA COMO DO	wer Antispat Ltd
RIGHTNALEFTNASatya Po	wei Annispat Lto
	Director
	-// · Director

(WITH GLASSES) RIGHT NIGHT RI INDNESS: ON CTAL ONL)
NIGHT BLINDNESS: (NYCTALOPIA):
(5) EXAMINATION OF EAR, NOSE & THROAT:  EXTERNAL EXAM:
HERNIA: HYDROCELE/ VARICOCELE CRYPTORCHIDISM PHIMOSIS O VARICOSE VEINS NO SIGNS OF STD O OTHER EXAMINATION FOR FEMALES:  MENSTRUAL HISTIRY OBSTETRICHISTORY  MENARCHE AT Yrs. GRAVIDA PHIMOSIS O O OTHER EXAMINATION FOR FEMALES:  MENSTRUAL HISTIRY OBSTETRICHISTORY  MENARCHE AT Yrs. GRAVIDA O OTHER EXAMINATION FOR FEMALES:  MENSTRUAL IRREGULARITY, IF ANY
INVESTIGATION
(7) LAB INVESTIGATION: URINE: ALBUMIN SUGAR
STOOL: Pus Cell RBC Epithelial Cell
HAEMOGRAM Blood Group: Rh factor: POSITIVE Hb 49 gm/dl TLC 7-6: /cmm RBC 4.2. mil/cmm DLC - Poly 50 % Lym 33 % Esino 07 % Mono 10 % Beso 00 Platelets Count 270 lakhs/cmm
LIPID PROFILE Serum cholesterol: 12 mg/dl S/Triglycerides: 100 mg/dl mg/dl HDL: 30 mg/dl mg/dl
HEPATIC PROFILE  SGPT: 90 1U/L SGOT: 22 IU/L  Alkaline Phosphatase: 65 IU/L
RENAL PROFILE  Blood Urea: 12 mg/dl S/Creatinine: 0.87 mg/dl
METABOLIC Blood Sugar - F: 91 mg/dl Blood Sugar - PP: 9 mg/dl mg/dl S/uric acid: 5.0 gm/dl

Satya Power And Ispat Ltd.

Director

(8) OTHER INVEST	TIGATION: ormal persons once in the	anica 477/186	
A ray Chest (III III	ORMAL	irce years,	
in case of a	my abnormality x-ray co	an be done at shorter int	ervals)
ECG (in case of an	y abnormality further to	ests should be carried or	ıt)
777. (2 1.11	NORMAL -		
Ottra Sound Wholi	e abdomen (In normal p	ersons once in three year	ars in case of any abnormality
can be done at short	,		
Others:	-NORMAL -		
(9) PULMONARY I	FUNCTION TEST:		
	FVC	FEV 1	FEVI/FVC
Predicted	3.19	2.20	3.19 2.20
Measured	3.61	4.31	3/01/4:31
% of Predicated	291	34%	29%/34%
Remarks: : SPIF	ROMETRY WITHIN I	NORMAL LIMIT	
		of both ears at frequency	of 125,250,500, 1000, 2000,
4000, 8000 Cycles	per second		
	PTA(dB HL)		
RIGHT EAR			
LEFT EAR	NORHAL		
	ITTORING		
PROVISIONAL	DIAGNOSIS – B/L NO	DRMAL HEARING SE	NSITIVITY
(12) Medical exam	mination of canteen sta	ıff	
e –			routine blood examination.
f -		nination for worm infect	
g-		seases (scabies and othe	ers)
h-	X-ray and other tests	for T.B.	
(13) Details of other s	pecific medical examin	nation carried out as n	nentioned in the respective
	07 of C.G. factories ru		
	*******		
			Signature (with date) of
			Factory Medical Officer
			1
			/
			Signature (with date) of
			certifying surgeon
			Ur. WISARAF
			CGMC Reg.No4584
			Odino (1eg.No4584

Satya Power And Ispat Ltd.

Director

Name of Emp	P-CHANDRA PR	AKASH Fat	her
DOB	Age35 Yrs S	Sex MALE De	ptt
P.No		Dat	e Of PME 12-04-2024
	An	nexure	
PRE-EMP	LOYMENT & PERI	ODIC MEDICA	L EXAMINATION
(1) GENERAL EXAM			
HEIGHT: NA	CM, WEIGHT: _ FIONNA (	NAKG	, BMI:NA DN:NA CM.
THROAT	TONGUE	TONS	SILS :
TEETH	GUMS NA	THY	ROID
LYMPH NODES_	NA_		
ADDITIONAL FIN	DINGSNO _		
(2) CARDIO-VASCUI	LAR SYSTEM: REGULAR PERIPHEI		
HEART SOUND:	_	NORMAL	
MURMUR, IF ANY		ND	
ADDITIONAL FINE	DINGS (S), IF ANY	ND	
(3) RESPIRATORY ST SHAPE OF CHEST: CHEST MOVEMEN	YSTEM: : VTS:	NORMAL_	
BREATH SOUNDS:		_ NUKMAL_	
(4) GASTRO-INTESTI	INAL SYSTEM:		N. 60 N. A.
ANY ARDOMINAL	LUMPS:	_ SI LEEIV	N ARMAL
EXAMINATION O	F EYES:		
			SQUINT:NA
NYSTAGMUS:	7151717	AN	
COLOUR VISION -			<del></del>
FUNDUS (L) (R)			
	UR IDENTIFICATIO		
	WITHOUT GLASSES)		
RIGHTN	ALEFT	AH	
(WITH GLASSES) R	IGHTNA	LEFT	MA
NEAR VISION (WIT	HOUT GLASSES)		
RIGHTN	A	TEFT	AN

Satva Rower And Ispat Ltd.
Director

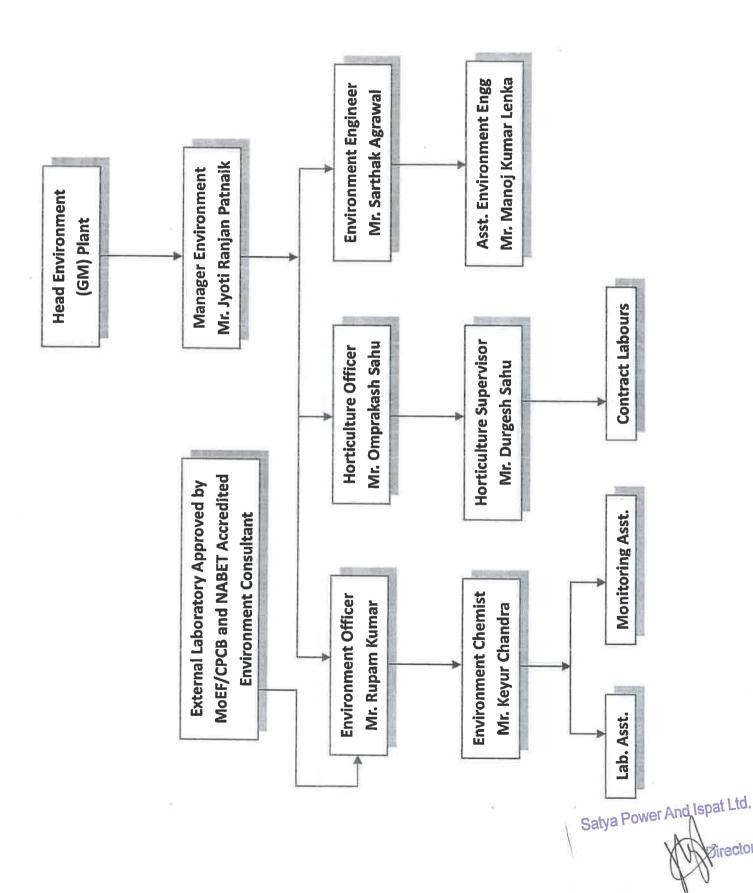
(WITH GLASSES) RIGHT	
(WITH GLASSES) RIGHT NIGHT BLINDNESS: (NYCTALOPIA):	
(5) EXAMINATION OF EAR, NOSE & THROAT:  EXTERNAL EXAM:N OF MALE	
HERNIA: HYDROCELE/ VARICOCELE  CRYPTORCHIDISM PHIMOSIS VARICOSE VEINS SIGNS OF STD VO  OTHER EXAMINATION FOR FEMALES:  MENSTRUAL HISTIRY OBSTETRICHISTORY  MENARCHE AT Yrs. GRAVIDA  LMP - W  MENSTRUAL IRREGULARITY, IF ANY	
INVESTIGATION	
URINE: ALBUMIN	800
LIPID PROFILE  Serum cholesterol: 10 mg/dl S/Triglycerides: 10 mg/dl mg/dl HDL: 80 mg/dl mg/dl mg/dl	
HEPATIC PROFILE SGPT: 18 IU/L SGOT: 10 IU/L Alkaline Phosphatase: 70 IU/L	
RENAL PROFILE Blood Urea: 9 mg/dl S/Creatinine: 0 89 mg/dl mg/dl	
METABOLIC Blood Sugar – F: 85 mg/dl Blood Sugar – PP: 95, mg/dl S/uric acid: 4 8 gm/dl	

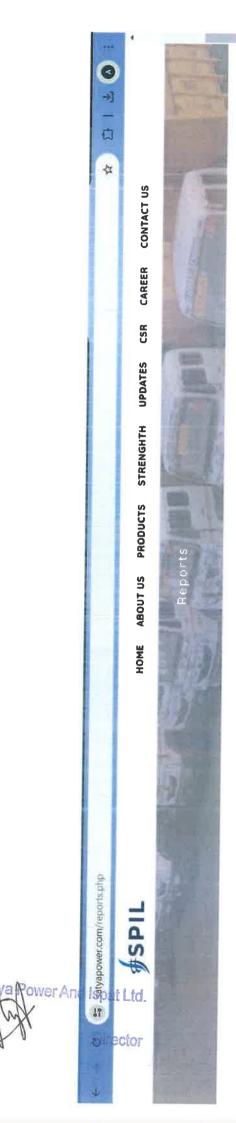
Satya Power And Ispat Lid.

(8) OTHER INVES	TIGATION:		
	normal persons once in t	hree years,	
in case of	ADRMAL	an be done at shorter inte	man la)
ECG (in case of a	ny abnormality further t	ests should be carried out	rvais)
	NORMAL		
Ultra Sound Whole can be done at she	le abdomen (In normal)	persons once in three year	rs in case of any abnormalit
	- MORMAL		
Others:		<del></del> -	
(9) PULMONARY	FUNCTION TEST:		
() TODITOTIFE	FVC	Party 1 s	FERTING
Predicted	1.26	FEV 1	FEVI/FVC
Measured	2 11	2.27	1.26/2.27
% of Predicated	11017	2.21	3. 4/2.2
Remarks: : SPII	ROMETRY WITHIN	NORMAL LIMIT	1481/371/
		of both gare at frequency	of 125,250,500, 1000, 2000
4000, 8000 Cycles	s per second	or oom cars at medicately t	11 125,250,500, 1000, 2000
	Laborate III		
DICUTOR	PTA(dB HL)		
RIGHT EAF	MOKITAL	Ya	
LEFT EAR	MORMAL		
PROVISIONAL	DIAGNOSIS – B/L NO	ORMAL HEARING SEN	SITIVITY
(12) Medical exa	mination of canteen sta	, ar	
e –		or venereal disease and ro	and an all and a second and
f-		or venereal disease and ro nination for worm infectio	
g-		seases (scables and others	
h-	X-ray and other tests	for T.B.	))
	2 2 1 mg 11 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1	101 1.D.	
(13) Details of other specification schedules of rule 1	pecific medical examin 07 of C.G. factories ru	ation carried out as me les 1962 –	ntioned in the respective
***************************************	*********************		
			Signature (with date) of Factory Medical Officer
······································			Signature (with date) of certifying surgeon Dr. GARAF M. Fathology CGMC Reg. No4584
			9140. 1007

Satra Power And Ispat Ltd.

Director





# Audit Reports

- SPIL Audit Report 2022-23
  - SPIL Audit Report 2021-22
    - SPIL Audit Report 2020-21

# Compliance Reports

- Compliance Report for the period 01/04/2023 to 30/09/2023
- Compliance Report for the period 01/10/2022 to 31/03/2023
- Compliance of Condition of Environment Clearance 01/04/2022
  - Compliance of Condition of Environment Clearance 01/10/2021
     Compliance of Condition of Environment Clearance 01/04/2021
- Environment Clearance
- Amendments dated 30/10/2010
- Environment Clearance dated 30/10/2010



# SATYA POWER AND ISPAT LTD.

1 st floor, V.R. Plaza, Link Road, Bilaspur (C.G.) Phone: 07752 - 231737, Fax: 07752 - 404453 GSTIN: 22AAHCS4472N170

Letter No. 198 / SPIL/IRO/2023-24

Date - 03-1-2024

To,

Intigrated Regional Office

Ministry of Environment, Forest & Climate Change

Aranya Bhawan, North Block, Sec-19

Naya Raipur, Atal Nagar,

Chhattisgarh-492002



Sub :- Submission of Form- V Environmental Statement.

Respected Sir,

With reference to the above subject please find enclosed herewith this letter Form - V Environmental Statement for the Financial Year 2022-23.

Kindly confirm and acknowledge the same.

For, Satya Power And Ispat Limited

**Authorized Signatory** 

Copy To: The Regional Officer, Chhattishgarh Environment Conservation Board Bilaspur

Satya Power Appl Layat Ltd.

WORKS: VIN GARAGE Blaspur (C.G.) E-mail spipl@hotmail.com • Website www.satyapower.com

CIN No. U40101CT2003PLC015521

# **FORM V**

( See Rule 14 )
Environmental statement for the financial year ending on 31st March on or before 30th of September every year

Period 01.04.2022 to 31.03.2023

### PART A

Name and Address of the	M/S Satya Power and Ispat Ltd
owner / Occupier	Village- Gatauri , Ratanpur Road
of the industry	Bilaspur,
operation or Process	Chhattisgach
	solpl@hotmail.com
Industry category	Scale- Medium
Primary - (STC Code)	Category- Orange
Secondary - ( STC Code )	STC code-24102 ( Sponge Iron)
Production Capacity (unit)	Sponge Iron - 90000 TPA
Year of Establishment	2005
Date of the last Environmental	
statement submitted.	10-11-2022

## PART B

# **Water and Raw Material Consumption**

1 Water Consumption m3/ d

Process	0
Cooling 100X 3 Kiln	65 M3/day
Domestic	4.5 KL / day
Horticulture / Green Belt	2 KL / day
Dust suppression	2 KL / day

Name of the Products	Process water consumption per unit of produ	
	During the previous financial year	During the current financial year
1) Canada the Block	(1)	(2)
1) Sponge Iron Plant	Nil	Nil

Note - The water is only required for cooling purpose, The Process doesnot required any water )

2 Raw Material consumption

Name of Raw	Name of	Consumption of raw	Consumption of raw material per unit		
Materials	Products	During the previous financial year (2021-2022)	During the current financial year (2021 - 2022)		
Iron Ore / Pellet Coal Sponge Iron	1.48 mt 1.55 mt	1.54 mt			
Dolomite		0.04	0.05 mt		

Industry may use codes if disclosing details of raw material would violete contractual obligations, otherwise all industries have to name the raw material used.

Satya Power And Ispat Ltd.

Director

# PART C

# Pollution discharged to environment / unit of output. ( Parameter as specified in the consent issued )

Pollution	Quantitity of Pollutants Discharged ( mass / day)	Concentration of Pollution in Discharges (mass / volume)	Percentage of Variation from prescribed standards with reasons
(a) Water	NII	Not Applicable	Not Application
(b) Air	Particulate matter below < 120 mg /Nm3	< 50 mg/NM3	Always maintained within standard norms of < 50 mg/NM3. Online stack monitoring system has been installed and activated

# PART D Hazardous Wastes

( as specified under Hazardous Wastes ( Management and Handling ) Rules, 1989)

Hazardous Wastes	Total Quantity ( Kg)	
	During the previous	During the current
(a) From Process * Used Spent Oil	Nil	Used or Spent Oil - 0.25Kl/ Annum Empty Barrel - 26 Barrels / Annum Contaminated Cotton Rags or others cleaning materials - 0.035 MT / Annum
(b) From Pollution control facilities.	Nil	Nil

# PART E

		SOLID W	ASIE			
SI No	Description	Total Quantity				
		During the previous year		During the current year		
(a)	From Process	Char / Dolochar		Char / Dolochar		
	( Dolochar Fly ash )	Generation	8088 mt	Generation	13961 mt	
		Ash / Dust		Ash / Dust		
		Generation	3254 mt	Generation	3950 mt	
(b)	From Pollution	NIL		NIL		
	control facility					
(c)	(1) Quantity	Char / Dolochar		Char / Dolochar		
	recycled or	Re-Cycled	NII	Re-Cycled	NI	
	re- utilised	Sold /Given	4102.48 m	Sold	16163.01 mt	
	within the unit (2)Sold	Disposed	Nil	Disposed	NII	
	(3) Disposed					
		Fly ash / Dust	Fly ash / Dust		Fly ash / Dust	
		Re-Cycled	NII	Re-Cycled	Nil	
		Given (Low line)	809 mt	Given ( Low line)	3280 mt	
		Disposed	Nil	Disposed	Nil	

Satya Power And Ispat Ltd.

Director

#### PART F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these catagories of wastes.

The waste generated in the process are not classified under Hazardous Waste except OII and grease and containers and cotton rags for the same. Thease are re-used and then sold to authorised re-cycleers agency.

Some of the waste are under other waste (ie- Char / Dolochar , Ash / Dust ) but are not hazardous in nature . The Char and Dolo-char is being sold to power plants for using as a fuel for Power plant. Ash /dust is being given for brick making/backfill.

#### PART G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

There is positive impact due to abatement measures taken to conserve natural resources...

1 Closed circuit cooling system has been adopted.

Regular maintenance of equipments are being done to minimise the noise and to achieve better

efficiency.

3 Sprinkling on internal roads are In practice to avoid fugutive dust.

#### PART H

Additional measures / invesments proposal for environmental protection including abatement of Pollution, Prevention of Pollution.

N.A.

# PART I

Miscellaneous

Any other particulars for improving the quality of the Environment.

N.A.

Satya Power And Ispat Ltd.

Director

For, SATYA POWER AND ISPAT LIMITED

thorised Signatory